

San Francisco Planning Department

535 MISSION STREET

Draft Supplemental Environmental Impact Report

1998.766E

Original FEIR Certification Date: November 13, 1986

Draft SEIR Publication Date: September 18, 1999

Draft SEIR Public Hearing Date: October 21, 1999

Draft SEIR Public Comment Period: September 18-October 21, 1999

Written comments should be sent to:

The Environmental Review Officer
San Francisco Planning Department
1660 Mission Street
San Francisco, CA 94103

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DATE: September 18, 1999

TO: Distribution List for the 535 Mission Street Project Draft SEIR

FROM: Hillary E. Gitelman, Environmental Review Officer

SUBJECT: Request for the Final Supplemental Environmental Impact Report
for the 535 Mission Street Project (Case No. 1998.766E)

This is the Draft of the Supplemental Environmental Impact Report (SEIR) for the 535 Mission Street Project. This Draft SEIR supplements an earlier EIR proposed for the project (Final EIR certified November 16, 1986, Case 84.043E). A public hearing will be held on the adequacy and accuracy of this Draft SEIR. After the public hearing, our office will prepare and publish a document titled "Summary of Comments and Responses" which will contain a summary of all relevant comments on this Draft SEIR and our responses to those comments; it may also specify changes to this Draft SEIR. Public agencies and members of the public who testify at the hearing on the Draft SEIR will automatically receive a copy of the Comments and Responses document, along with notice of the date reserved for certification; others may receive such copies and notice on request or by visiting our office. This Draft SEIR together with the Summary of Comments and Responses document will be considered by the City Planning Commission in an advertised public meeting and certified as a Final SEIR if deemed adequate.

After certification, we will modify the Draft SEIR as specified by the Comments and Responses document and print both documents in a single publication called the Final Supplemental Environmental Impact Report. The Final SEIR will add no new information to the combination of the two documents except to reproduce the certification resolution. It will simply provide the information in one rather than two documents. Therefore, if you receive a copy of the Comments and Responses document in addition to this copy of the Draft SEIR, you will technically have a copy of the Final SEIR.

We are aware that many people who receive the Draft SEIR and Summary of Comments and Responses have no interest in receiving virtually the same information after the SEIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final SEIR to private individuals only if they request them. If you would like a copy of the Final SEIR, therefore, please fill out and mail the postcard provided inside the back cover to the Office of Environmental Review within two weeks after certification of the SEIR. Any private party not requesting a Final SEIR by that time will not be mailed a copy.

Thank you for your interest in this project.



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INTRODUCTION

On November 13, 1986, the City Planning Commission certified a Final Environmental Impact Report (FEIR) for a 23-story office building with associated retail space at 535 Mission Street, between First and Second Streets (Case No. 1984.043E). The project was subsequently withdrawn by the project sponsor and was never approved by the Planning Commission. In October, 1998, the current project sponsor, DWI Development, Inc., notified the Planning Department that it wished to proceed with the entitlement process for the 535 Mission Street project with a somewhat modified design. This Draft Supplemental EIR updates and revises the FEIR to account for differences between the original project and the currently proposed project¹ and for changes in background (cumulative) growth, changes in local circulation patterns due to the 1989 Loma Prieta earthquake, and revisions to the Bay Area Air Quality Management District's significance criteria for emissions of certain criteria air pollutants.

The project itself has changed in four respects from the project that was analyzed in 1986: 1) the current sponsor proposes to meet the Planning Code open space requirement by making street and sidewalk improvements to Shaw Alley (adjacent to the project site on the west) and by creating a 6'-6" building setback on the west and north property lines that would effectively widen the east sidewalk of Shaw Alley and the south side of Mission Street, in addition to providing street level indoor open space, as did the 1986 project; 2) the sponsor does not propose an asymmetrical angle be "cut away" from the building's southeast corner, as did the 1986 project to provide more sunlight to the adjacent 100 First Street sun terrace; 3) the top of the building would not include a pointed rooftop and would be more "squared off" than the 1986 project; and 4) the current project would be 22 stories (including a mechanical penthouse), rather than 23 stories. The proposed building height would be reduced six feet to 294 feet, and the building would accommodate approximately 253,000 square feet of office, 2,000 square feet of retail, and 5,500 square feet of open space, similar to the 1986 project. The 1986 project included 255,000 square feet of office, 5,000 square feet of retail, and 5,700 square feet of open space.

Although only one EIR is typically prepared for a project, a Supplemental EIR has been prepared in this case in accordance with *CEQA Guidelines* Sections 15162 and 15163. The previous Final EIR is available for review at the San Francisco Planning Department, 1660 Mission Street and is incorporated herein by reference.

This Draft SEIR focuses on the new impacts that would occur as a result of the proposed project that would not have occurred as a result of the original project, and on environmental issues that have experienced changes in circumstances since November 1986. Except where otherwise noted, this document discusses only setting and impact information for the proposed project that is different than for the original project. In contrast to the format used in the 1986 FEIR, each environmental topic's setting

¹ Throughout this document, the term "original project" refers to the design analyzed in the 1986 certified EIR and the terms "proposed project" or "current project" refer to the design being proposed by the current project sponsor and analyzed in this Draft SEIR.

and impacts are consolidated into one chapter in this Draft SEIR. In addition to the individual setting and impacts sections, Section G, Other Topics, Including Those Discussed in Initial Study, addresses all of the additional environmental issues that did not warrant their own sections.

The Final EIR will be presented, along with the 1986 FEIR, to project decision-makers prior to their consideration of the project sponsor's applications for project authorizations.

CHAPTER I

SUMMARY

A. PROJECT DESCRIPTION (p. 14)

The 294-foot tall project would be a 22-story building including partial second floor and penthouse mechanical levels, plus one subsurface level of parking. As calculated under the Planning Code, the building would contain about 253,000 gross sq. ft. of office space. This would result in a Floor Area Ratio (FAR) of 15.5:1 for the 16,320-sq. ft. development site. The ground-floor would include a lobby that would have access from both Mission Street and Shaw Alley as well as approximately 2,000 gross sq. ft. of retail space. In addition, in order to meet the Planning Code requirement for open space, the project would include 6'-6" setbacks along Shaw Alley (on the west) and Mission Street (on the north), approximately 2,200 sq. ft. of ground-floor interior dedicated open space (at the building's southwest and northeast corners), and improvements to Shaw Alley.

The third through 21st floors of the proposed building would contain office space, while the partial second and entire 22nd floor/penthouse would consist of mechanical space. The average floor size of floors 3 through 21 would be about 13,300 sq. ft. The basement level would contain about 39 short-term valet parking spaces and two-service vehicle loading spaces. Two truck loading docks and a parking ramp would be accessible from Minna Street.

The project would include the demolition of an existing structure located at 531 Mission Street. The existing structure includes approximately 10,000 sq. ft. of office space and approximately 5,000 sq. ft. of retail (restaurant space). Total changes in floor area for the site would be a net increase of about 243,000 gross sq. ft. of office space and a net decrease of about 3,000 gross sq. ft. of retail space. The parking and the open space would be new uses on the site.

The sponsor proposes that retail and public open space occupy the Mission Street ground floor frontage and that a ground floor café be situated on the west (Shaw Alley) side of the project. To enhance the sense of openness, this facade would feature a two-story glass wall. The main lobby, on Mission Street at the corner of Shaw Alley, would be a two-story, approximately 24-foot-tall space inside the glass wall. Subject to City approval, the sponsor proposes that Shaw be converted to a pedestrian alley during midday periods, and allow vehicular access at other times.

The proposed project would include about 106,000 gsf of transferred development rights. The project sponsor has not yet identified buildings from which development rights would be sought. The project would incorporate art as required by the Planning Code Section 149, provide required open space on-site as described above, and meet the childcare requirement via an in lieu fee.

B. AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

This supplemental environmental impact report, for a proposed office highrise project at 535 Mission Street, focuses on the issues of transportation, visual quality, air quality, wind and shadow as potential significant effects of the project, but also addresses land use and zoning, archaeological resources, historic architectural resources, noise, population and employment, and growth inducement, for informational purposes. All other potential environmental effects were found to be at a less-than-significant level or to be mitigated to a level of less-than-significant with mitigation measures agreed to by the project sponsor. Please see the Initial Study, included in the 1986 FEIR as Appendix A, for analysis of issues other than those addressed in this document. See the Introduction to this document for a discussion of the four primary differences between the proposed project and the original project analyzed in the certified 1986 FEIR.

The proposed project design has been presented to the Planning Department for review prior to consideration by the Planning Commission. It is common for preliminary design proposals to be refined somewhat during the review process, and as a result of final design development. Any notable modifications to the project design would be analyzed to determine whether they would affect information and analysis contained in this SEIR. Other than these potential refinements to the project design, there are no unresolved issues with regard to the project proposal. There are also no areas of substantial controversy known to the EIR preparers.

C. MAIN ENVIRONMENTAL EFFECTS

VISUAL QUALITY (p. 30)

The proposed project would result in a visual change to the project site in that it would demolish an existing three-story building and construct a 294-foot tall highrise office building. The proposed project would differ visually from the project analyzed in the 1986 FEIR as a result of the four differences between the two projects, including: 1) street and sidewalk improvements to Shaw Alley (adjacent to the project site on the west) and a 6'-6" building setback on the west that would effectively widen the east sidewalk of Shaw Alley; 2) no asymmetrical angle to be "cut away" from the building's southeast corner; 3) a more "squared off" top of the building; and 4) 22 stories, rather than 23 stories. These changes would not alter the conclusions of the 1986 FEIR. The project would not have a substantial effect on a scenic vista or views from public areas, would not result in a substantial demonstrable negative aesthetic effect, and would not produce new substantial light or glare. The project would therefore not have significant visual quality effects on the environment.

TRANSPORTATION, CIRCULATION AND PARKING (p. 37)

Transportation impacts analyzed in the 1986 FEIR were reevaluated for this Draft SEIR in light of changes in standard methodology for traffic analysis as well as changes in circumstances since certification of the FEIR. These changes include replacement of the now out-dated horizon year for cumulative analysis used in the FEIR, the 1989 Loma Prieta earthquake-caused changes to the regional freeway system, particularly in downtown San Francisco, and additional information on specific development projects and projected future jobs and housing in the project vicinity.

The current project would generate about 750 daily vehicle trips, of which about 62 vehicle trips (60 outbound and 2 inbound) would occur in the p.m. peak hour (both figures are net new and discount for existing land uses on the site), when analyzed using current assumptions. This compares to about 80 outbound vehicle trips during the p.m. peak hour described in the 1986 FEIR.

The estimated 62 vehicle trips would not meaningfully affect local intersections in the p.m. peak hour, as these trips would be dispersed among various nearby intersections, depending on the location at which drivers were to find parking. At the three intersections analyzed in the 1986 FEIR, (First and Harrison Streets at the Bay Bridge/I-80 Eastbound On-Ramp, First and Mission Streets, and Beale and Mission Streets), project traffic would result in only an incremental change in operations (no change in LOS), which would not be considered a significant effect.

Traffic generated by interim cumulative development (conditions that are anticipated to exist in the project vicinity if all of the nearby projects that are currently under review or already approved but not yet built are completed [by an assumed 2005]) would increase p.m. peak-hour volumes in the Transbay Study Area by about 13 percent over existing conditions in the westbound (outbound from downtown) direction on Harrison, Howard, and Mission Streets. Project traffic impacts would not be considered “considerable” or significant in this context.

Based on traffic analysis for the Transbay Study Area, which assumed a development comparable to the project on the 535 Mission Street block, cumulative conditions at the First Street/Harrison Street/I-80 on-ramp intersection will remain unacceptable (LOS F) in the future, as stated in the 1986 FEIR, while conditions at First and Mission Streets will likely remain unacceptable (LOS E or F) and operations at Beale and Mission Streets will remain acceptable (LOS B). The project contribution to cumulative operating conditions at any given intersection would be small, and congested conditions are projected to occur whether or not the current project is implemented. Thus, the project’s contribution to cumulative conditions would not be considered “considerable” or significant.

Regarding transit, the current project would generate approximately 160 transit trips in the p.m. peak hour and would not have a noticeable effect on transit levels of service. The proposed project would be subject to the Transit Impact Development Fee, a one-time fee assessed against downtown projects to offset increased capital costs to MUNI to provide additional capacity to serve the increased demand from new development.

The project would create a long-term parking demand for about 110 parking spaces and short-term parking demand for 10 equivalent daily spaces, for a total parking demand of about 120 daily spaces, compared to a total parking demand of about 190 daily spaces estimated in the 1986 FEIR. Because the project would provide about 39 parking spaces, with valet operations, parking demand would not be met by the on-site supply. In the context of San Francisco’s “Transit First” policy, parking shortfalls are not considered to be a significant environmental effect. Off-street parking is not required for commercial uses in the C-3 District.

The project would not have a noticeable effect on pedestrian flow conditions on sidewalks and crosswalks in proximity to the project site. The project’s effect would be similar to that described in the 1986 FEIR (i.e., conditions would be no worse than “impeded”).

The project's proposed two truck loading docks accessible from Minna Street, and two service vehicle loading spaces in the basement would meet the Planning Code requirement for three loading spaces. The conclusion of the 1986 FEIR, similar to that described above, remains valid, and no further analysis of loading impacts is required.

Concerning construction-related impacts, the project would be built with a duration and level of construction truck and worker activity similar to that described in the 1986 FEIR. That is, there would be between 15 and 25 truck movements per day during the demolition and excavation phases (about three months in duration) and about 5 truck movements per day during the remaining approximately 15-month construction phase. Temporary and intermittent traffic and transit impacts would occur during the construction period. The effects of construction traffic on surrounding traffic and transit would be mitigated by measures proposed as part of the project.

AIR QUALITY (p.43)

The impacts of the current project differ little from the project that was analyzed in the 1986 FEIR, although there were changes in circumstances from which different conclusions regarding project and cumulative air quality effects could arise. These changes are described below.

First, since publication of the 1986 FEIR, state and federal agencies have mandated a reformulation of gasoline such that the fuel burns more cleanly than before, i.e., produces less carbon monoxide. Thus, while traffic volumes on certain streets in the project vicinity may be higher than was predicted in the 1986 FEIR, carbon monoxide concentrations are expected to decrease over time. Second, the *BAAQMD CEQA Guidelines*, which had been used as the basis for the air quality impact evaluation for the 1986 FEIR, were revised in 1996 and now recommend that lead agencies use an emissions-based criterion of 80 pounds per day of ROG, NO_x, or PM-10 to identify significant project-related increases in those pollutants. Third, emissions estimated for the project are generally higher than those presented for the project in the 1986 FEIR. The difference in calculated emissions derives from changes in calculation methods and emissions factors rather than from changes in the project itself. Finally, *BAAQMD CEQA Guidelines* includes a different approach for evaluating the cumulative impacts of projects than was used for the 1986 FEIR. To assess the significance of the cumulative effect of projects that, in themselves, would contribute less than 80 pounds per day of ROG, NO_x, or PM-10, BAAQMD recommends that the analysis determine whether the applicable general plan is consistent with the regional air quality plan (i.e., the '97 *Clean Air Plan*) and, if so, whether the project is consistent with that general plan.

The updated emissions estimates indicate that the project would result in a net increase of approximately 19, 21, and 17 pounds per day of ROG, NO_x, and PM-10, respectively. These increases would not be significant since they would not approach the corresponding significance criterion of 80 pounds per day. CO emission levels would also be below BAAQMD daily standards and federal and state one-hour and eight-hour local concentration standards.

Using the BAAQMD's approach to assessing cumulative impacts, neither the project's contribution nor the overall cumulative impact would be significant because development in the area would be consistent with the San Francisco General Plan, which is in turn consistent with the 1997 Clean Air Plan. Using a different approach, the 1986 FEIR concluded that particulate matter emissions from construction and

vehicle trips would contribute with other development to the significant cumulative effect of increased particulate concentrations in San Francisco. The project's vehicle-related contribution to this cumulative impact would be somewhat less than estimated in 1986.

SHADOW (p. 50)

The 1986 FEIR found that the original project would not add any shadow to open spaces under Recreation and Park Department jurisdiction during any of the Proposition K (Section 295) hours. In general, with the exception of the additional shadow on the 100 First Street sun terrace, shadow effects for the proposed project would be as described in the 1986 FEIR.

As noted in the 1986 FEIR, the original project would add new shadow on nearby streets, sidewalks, and buildings, as well as on publicly accessible, private open spaces (not subject to Section 295) in the project vicinity. The nearest and largest of these spaces is the 100 First Street sun terrace, which is located above a two-story parking garage on Mission Street, immediately adjacent to the project site on the east. Because of its location relative to the sun terrace, the original project would add new shadow to the sun terrace at various times throughout the year, and especially in the afternoon.

By 2:00 p.m. year-round, the project would cast shadow on most of the sun terrace. Shadow from the project as currently proposed would be more extensive on the sun terrace than that depicted in the 1986 FEIR, since the current project design does not propose the original project's diagonal cut at the building's southeastern corner. Therefore, at 12 noon on December 21, project shadow would cover all but the southeastern corner of the sun terrace. On March 21 at noon, when the sun terrace is mostly in sunlight, project shadow would cover about half of the sun terrace, leaving the southeastern half in sunlight. A similar pattern would prevail in September, except that shadow patterns would occur one hour later due to daylight savings time. On the summer solstice, June 21, at noon, the sun terrace would remain mostly in sunlight through the noon hour.

As described in the 1986 FEIR, other publicly accessible private open spaces (not subject to Section 295) that would be shaded by the proposed project include the Golden Gate University entry plaza and sixth-floor seating area, and, for brief periods, the plaza adjacent to 525 Market Street. The project's proposed open space on Shaw Alley would be mostly shaded by existing buildings and by the project, although it would receive sunlight for short periods during the summer early afternoon hours and fall morning hours. Because no open spaces subject to Planning Code Section 295 would be affected, the project's shadow impacts would not be considered significant.

WIND (p. 54)

Wind-tunnel tests were conducted for each of three test scenarios: existing setting, setting plus the proposed project, cumulative conditions plus the proposed project. Thirty-six test locations were studied for each of these scenarios for the four prevailing wind directions: northwest, west-northwest, west, and southwest. Wind tunnel testing methodology has changed since 1986, so the results between the original and currently proposed projects are not directly comparable.

The existing wind conditions range from sheltered to moderately windy; the average wind speed is 9 mph. Wind speeds in pedestrian areas range from 5 mph to 15 mph. In general, the highest ground-level wind speeds in the vicinity of the site occur along Minna Street, west of Shaw Alley, where wind speeds of 14 mph and 16 mph exist at two locations and on the south side of Mission Street, west of Shaw Alley, where wind speeds of 15 mph exist at two locations. The wind speeds at nine of the 36 measured existing locations exceed the Planning Code's pedestrian-comfort criterion value of 11-mph. This would be in contrast to the 1986 FEIR, which found, using slightly different methodology, that there were no existing exceedances of the comfort criteria.

Wind speeds of 2 mph to 6 mph exist at five seating area locations in the nearby public open spaces of 100 First Street sun terrace and the entrance to Golden Gate University. All five locations meet the 7 mph seating-comfort criterion of the Planning Code. The Code's wind hazard criterion of 36 mph is now exceeded at two locations on Minna Street, west of Shaw Alley.

As a result of the proposed project, wind conditions would remain sheltered to moderately windy. Compared to existing conditions, the average wind speed would decrease, by less than 1/2 mph, to just under 9 mph. The project would reduce existing wind speeds at 19 of the 36 locations and increase existing wind speeds at 9 locations.

Wind speeds in pedestrian areas would be slightly reduced compared to existing conditions. The highest wind speeds in the vicinity (13 mph and 14 mph) would occur on Minna Street, west of Shaw Alley, while wind speeds of 12 mph would occur on the south side of Mission Street, west of the project site, and at other points on Minna Street west of the project site. Wind speeds at all but one of these locations would be slightly less than under existing conditions.

With construction of the project, a total of six existing exceedances of the pedestrian-comfort criterion would continue to occur. The project would add no new exceedances and would eliminate three of the nine existing exceedances. Wind speeds would increase at three of the five existing open space locations. Wind speeds at one location on the 100 First Street sun terrace would exceed the seating-comfort criterion value of 7 mph; this would be a new exceedance. (This would be in contrast to the original 1986 project that would have resulted in wind increases at 15 locations (by one to three mph), but would not have exceeded any comfort criteria.) With the project, one of the two existing wind hazard criterion exceedances would continue, while the other would be eliminated.

Under cumulative conditions, wind conditions would remain sheltered to moderately windy; the average wind speed would decrease slightly, compared to project conditions, to just over 8 mph or more than 1/2 mph less than under existing conditions. Cumulative conditions would reduce project wind speeds at 19 of the 36 locations and increase project wind speeds at 2 locations.

Cumulative development would eliminate four of the existing exceedances of the pedestrian-comfort criterion, and would leave five of the existing exceedances remaining, for a total of five pedestrian-comfort exceedances. Wind speeds would decrease at all of the five open space locations. The one project exceedance of the seating-comfort criterion in the 100 First Street sun terrace would be eliminated. Cumulative development would eliminate the existing wind hazard exceedance and would not cause a new wind hazard exceedance. No significant wind impacts were identified in the 1986 FEIR, and none have been identified in the current, updated wind analysis. The project would be subject to

Planning Code Section 148 and would not cause ground-level winds to exceed wind hazard criterion of 36 mph at any new locations.

D. MITIGATION MEASURES (p. 62)

Mitigation measures in the 1986 FEIR have been assessed to determine their continued relevance. Some previous measures have been eliminated if they relate to non-significant effects and others have been updated to reflect current City practices. See Chapter IV, Mitigation Measures, for those previous measures that are applicable to the proposed project and Appendix C for previous measures that are not applicable to the proposed project. Measures that would apply to the current proposed project, some of which have been identified in this SEIR, are listed below.

CULTURAL RESOURCES

- Given the location and depth of excavation proposed, and the likelihood that archaeological resources would be encountered on the project site, the sponsor has agreed to retain the services of an archaeologist. The archaeologist would carry out a pre-excavation testing program to better determine the probability of finding cultural and historical remains. The testing program would use a series of mechanical, exploratory borings or trenches and/or other testing methods determined by the archaeologist to be appropriate.

If, after testing, the archaeologist determines that no further investigations or precautions are necessary to safeguard potentially significant archaeological resources, the archaeologist would submit a written report to the Environmental Review Officer (ERO), with a copy to the project sponsor. If the archaeologist determines that further investigations or precautions are necessary, he/she shall consult with the ERO and they shall jointly determine what additional procedures are necessary to minimize potential effects on archaeological resources.

These additional mitigation measures would be implemented by the project sponsor and might include a program of on-site monitoring of all site excavation, during which the archaeologist would record observations in a permanent log. The monitoring program, whether or not there are finds of significance, would result in a written report to be submitted first and directly to the ERO, with a copy to the project sponsor. During the monitoring program, the project sponsor would designate one individual on site as his/her representative. This representative would have the authority to suspend work at the site to give the archaeologist time to investigate and evaluate archaeological resources should they be encountered.

Should evidence of cultural resources of potential significance be found during the monitoring program, the archaeologist would immediately notify the Environmental Review Officer (ERO), and the project sponsor would halt any activities which the archaeologist and the ERO jointly determine could damage such cultural resources. Ground disturbing activities which might damage cultural resources would be suspended for a total maximum of four weeks over the course of construction.

After notifying the ERO, the archaeologist would prepare a written report to be submitted first and directly to the ERO, with a copy to the project sponsor, which would contain an assessment of the potential significance of the find and recommendations for what measures should be implemented to minimize potential effects on archaeological resources. Based on this report, the ERO would

recommend specific additional mitigation measures to be implemented by the project sponsor. These additional mitigation measures might include a site security program, additional on-site investigations by the archaeologist, and/or documentation, preservation, and recovery of cultural material.

Finally, the archaeologist would prepare a report documenting the cultural resources that were discovered, an evaluation as to their significance, and a description as to how any archaeological testing, exploration and/or recovery program was conducted.

Copies of all draft reports prepared according to this mitigation measure would be sent first and directly to the ERO for review. Following approval by the ERO, copies of the final report(s) would be sent by the archaeologist directly to the President of the Landmarks Preservation Advisory Board and the California Archaeological Site Survey Northwest Information Center. Three copies of the final archaeology report(s) shall be submitted to the Office of Environmental Review, accompanied by copies of the transmittals documenting its distribution to the President of the Landmarks Preservation Advisory Board and the California Archaeological Site Survey Northwest Information Center. *(Revised and expanded from 1986 FEIR.)*

TRANSPORTATION

- During a construction period, construction truck movement would be permitted only between 9:00 a.m. and 3:30 p.m. to minimize peak-hour traffic conflicts and to accommodate queueing of Muni buses prior to the peak hours. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering of the Department of Public Works, the Fire Department, Muni and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects. To minimize cumulative traffic impacts due to lane closures during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are planned for construction or later become known.

AIR QUALITY

- The project sponsor would require the contractor(s) to spray the site with water during demolition, excavation, and construction activities; spray unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand or other such material; and sweep surrounding streets during demolition, excavation, and construction at least once per day to reduce particulate emissions.

Ordinance 175-91, passed by the Board of Supervisors on May 6, 1991, requires that non-potable water be used for dust control activities. Therefore, the project sponsor would require that the contractor(s) obtain reclaimed water from the Clean Water Program for this purpose. The project sponsors would require the project contractor(s) to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as a prohibition on idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period. *(Revised from the 1986 FEIR)*

NOISE

- The construction contract would require that the project contractor muffle and shield intakes and exhausts, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible, so that noise would not exceed limits stated in the City's Noise Ordinance (Article 29, San Francisco Administrative Code, 1972).
- The project sponsor would require the general contractor to construct barriers around the site, and around stationary equipment such as compressors, which would reduce construction noise by as much as five dBA, and to locate stationary equipment in pit areas or excavated areas, as these areas would serve as noise barriers.
- The project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. The actual pounding from pile driving would occur during a five- to eight-minute span per pile.
- The project sponsor would require that the construction contractor limit pile driving activity to result in least disturbance to neighboring uses. Pile driving would be limited to the hours between 11 p.m. and 7 a.m. Mondays through Saturdays and 11 p.m. and 8 a.m. on Sundays to minimize disturbance to the occupants of Golden Gate University. This would require a work permit from the Director of Public Works pursuant to San Francisco Noise Ordinance Section 2907(c).
- As recommended by the Environmental Protection Element of the San Francisco General (Master) Plan, an analysis of noise reduction measurements would be prepared by the project sponsor and recommended noise insulation features would be included as part of the proposed building. For example, such design features would include fixed windows and climate control.

GEOLOGY/TOPOGRAPHY

- If dewatering were necessary, any groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to reduce the amount of sediment entering the storm drain/sewer lines.
- Should dewatering be necessary, the final soils report would address the potential settlement and subsidence impacts of this dewatering. Based upon this discussion, the soils report would contain a determination as to whether or not a lateral and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, the Department of Public Works would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring. Groundwater observation wells would be installed to monitor the level of the water table and other instruments would be used to monitor potential settlement or subsidence. If, in the judgment of the Special Inspector, unacceptable subsidence were to occur during construction, groundwater recharge would be used to halt this settlement. Costs for the survey and any necessary repairs to service under the street would be borne by the contractor.
- The final soils report would also recommend whether or not watering of piles of adjacent structures was necessary. If it were found to be necessary, the project sponsor would ensure that the general contractor complied.

HAZARDS

- To expedite implementation of the City's emergency response plan, the project sponsor would prominently post information for building occupants concerning what to do in the event of a disaster.

MEASURES IDENTIFIED IN THIS SEIR

- A health and safety plan would be prepared by the project sponsor that addresses potential construction worker exposure to volatile organic compound vapors and incidental contact with potentially-contaminated groundwater.
- If excavation activities during construction require dewatering, water removed from the excavation should be characterized and managed in accordance with all applicable requirements. Such activities may include temporary containment on site, waste characterization by testing at an analytical laboratory, and appropriate off-site disposal. The specific activities that may be required should be determined based on the actual site conditions and construction activities.

E. ALTERNATIVES TO THE PROPOSED PROJECT (p. 67)

ALTERNATIVE A: NO PROJECT

This alternative would entail no change to the site, which would remain in its existing condition. If the No Project Alternative were implemented, no impacts of the project would occur.

ALTERNATIVE B: NO TRANSFER OF DEVELOPMENT RIGHTS, 9.1 FAR

The project as proposed would include the transfer of development rights (TDR) from unidentified sites, allowing for a FAR of 15.5:1 rather than the basic allowable FAR of 9:1 without TDR. This alternative considers a building without TDR and thus at a FAR of 9:1.

Although no specific design has been created for this alternative, it would result in a building substantially reduced in size and height from the proposed project. This alternative would have more parking (about three additional spaces) than the project because no space would be required in the basement for service loading.

Like the proposed project, the alternative would require demolition of the un-rated building at 531 Mission Street. As such, the impacts would be similar to those described for Alternative B1 in the 1986 FEIR, although effects related to demolition of the 535 Mission Street building would not occur (because of its demolition since certification of the 1986 FEIR). Wind effects would be similar to those of the proposed project. Shadows on the Golden Gate University entry plaza and on the sun terrace of 100 First Street would be similar to those from the proposed project except during the summer months when they would be less on the Golden Gate University plaza in the morning and less on the 100 First Street open space after midday. Non-significant transportation and air quality impacts would be reduced. This alternative would be less visible from medium- and long-range views.

ALTERNATIVE C: NO BULK EXCEPTIONS

This alternative would include setbacks above the base as called for in Section 132.1(c) of the San Francisco Planning Code, Separation of Towers. Therefore, as opposed to the proposed project, this alternative would be set back above the base 15 feet from the eastern interior property line rather than 12 feet as currently proposed. The project would also not require an exception to bulk limitations established by Section 270 of the Planning Code.

As a result of not seeking exceptions to these requirements, this alternative would have slightly less office space and about 15 percent less overall density than the project. The effects of this alternative would be similar to those described for Alternative C1 in the 1986 FEIR Alternatives section. Like the currently proposed project, this alternative would require a Planning Code exception because it would exceed the 11-mph pedestrian comfort criterion of Sec. 148(a) related to ground-level wind effects. Physical effects would be virtually indistinguishable from those of the project, since the amount of office space and the building shape would be similar.

Another version of this alternative could reduce the floor size of the upper tower, meeting the bulk and setback limitations of the Planning Code, but add three additional floors, and maintain approximately the same amount of office space as in the proposed project. A taller building would be slightly more noticeable in long-range views of the site and could require reassessment to determine changes in wind conditions and compliance with San Francisco Planning Code Section 148. This alternative would not result in new shadow effects on public open spaces subject to Proposition K restrictions.

ALTERNATIVE D: NO PARKING

Under this alternative, an office tower would be constructed on the site just as it would under the currently proposed project, although without the proposed 39 parking spaces in the basement level. Instead, the basement level would contain only service/mechanical space and two service vehicle loading spaces. All impacts of this alternative would be similar to the project, as described in the 1986 FEIR Alternatives section (pp. 147), except that there would be fewer vehicle trips to the site. As a result, employees and visitors would park elsewhere in the vicinity, and project vehicle trips would be dispersed throughout a wider area.

CHAPTER II

PROJECT DESCRIPTION

Reader: The following project description replaces the Project Description of the 1986 FEIR.

A. SITE LOCATION

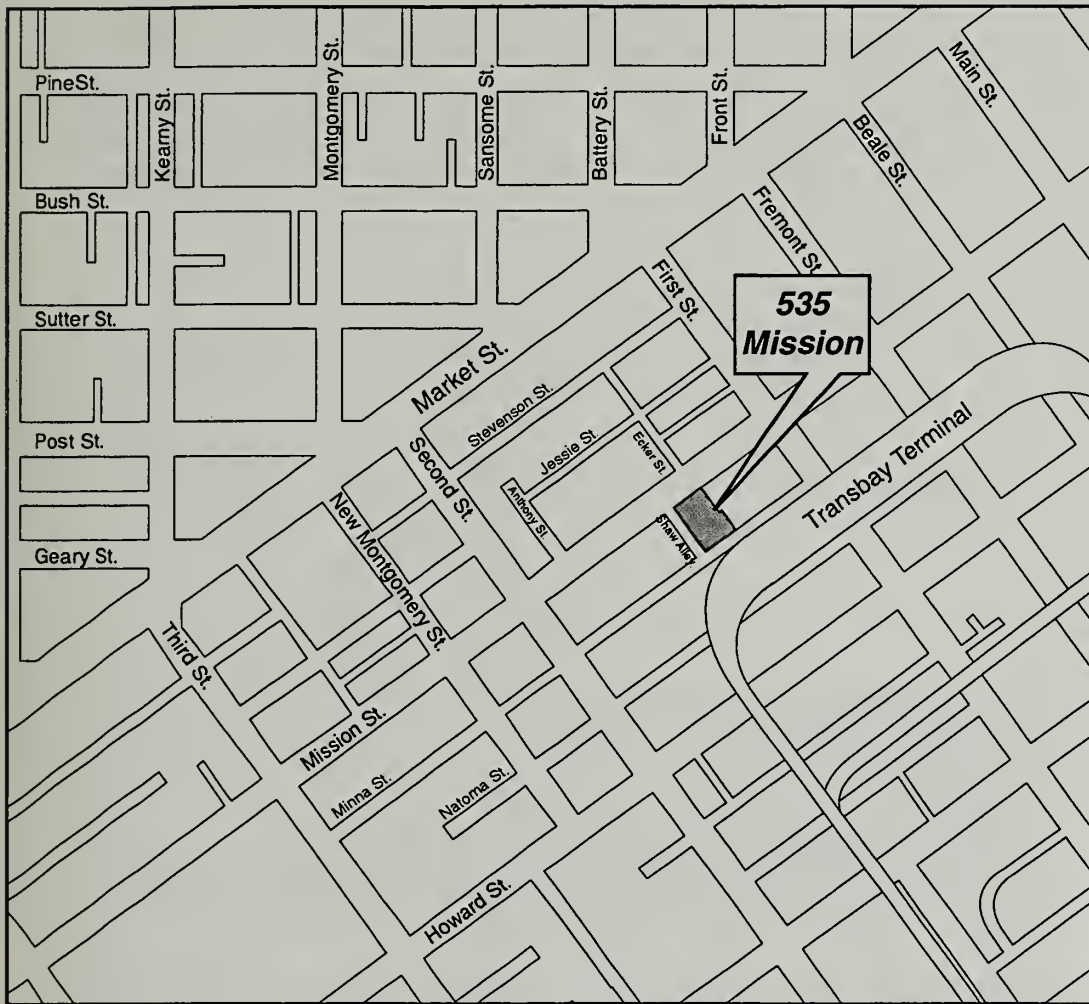
The proposed project would be located at 535 Mission Street on the south side of Mission Street at Shaw Alley, between First and Second Streets in the City and County of San Francisco, on Lots 68 and 83 of Assessor's Block 3721 (see Figure 1). The 16,320-sq. ft. site is bounded by Mission Street to the north, Minna Street to the South, Shaw Alley on the west, and to the east, a parking garage atop which is an outdoor open space for the 100 First Street office building. Golden Gate University is located across Mission Street from the site and the Transbay Transit Terminal (referred to herein as Transbay Terminal) at First and Mission Streets is about one-half block to the east.


B. PROJECT CHARACTERISTICS

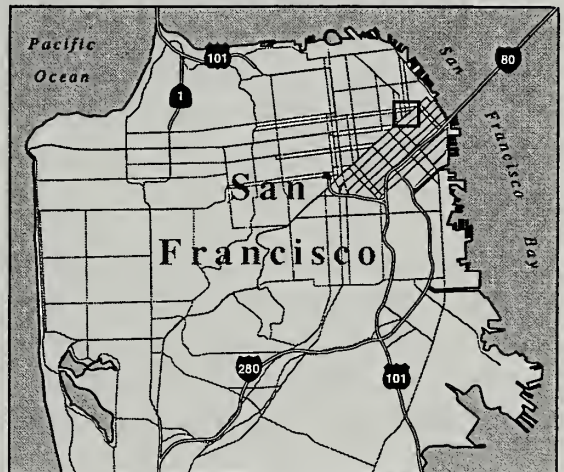
The 294-foot tall project would be a 22-story building including partial second floor and penthouse mechanical levels, plus one subsurface level of parking. (See Table 1 for a summary of project characteristics, including a comparison to the original project analyzed in the 1986 FEIR.) As calculated under the Planning Code, the building would contain about 253,000 gross sq. ft. of office space. This would result in a Floor Area Ratio (FAR), the ratio of floor area (ground-floor retail, parking and mechanical are excluded from FAR) to site size, of 15.5:1 for the 16,320-sq. ft. development site. The ground-floor would include a lobby with access from both Mission Street and Shaw Alley as well as approximately 2,000 gross sq. ft. of retail space.

In addition, in order to meet the Planning Code requirement for open space, the project would include 6'-6" setbacks along Shaw Alley (on the west) and Mission Street (on the north), approximately 2,200 sq. ft. of ground-floor interior dedicated as open space (at the building's southwest and northeast corners), and improvements to Shaw Alley (including seating, landscaping, lighting and decorative paving).² The southwest interior open space would be landscaped and include tables, chairs, benches, and a water element. The open space in the northeast portion of the building would be more passive in use and would include a fine art wall, seating, and landscaping. The second-floor winter garden and sun terrace proposed as part of the original project and described in the 1986 FEIR is no longer proposed as part of the project.

² It should be noted that because Shaw Alley would be available for use as public open space for only a portion of each day (approximately three hours), only a portion of its total square footage may be applied towards complying with the proposed project's open space requirement.



 Project Site
 Assessor's Block 3721
 Lots 68 and 83



SOURCE: Environmental Science Associates; San Francisco Planning Department

535 Mission Street / 980392 ■

Figure 1
Project Location

TABLE 1
SUMMARY OF PROJECT CHARACTERISTICS

	Project Analyzed in 1986 FEIR	Current Proposed Project	Net New (less existing uses on site)
Height (to roof)	300 ft.; 23 stories ^a	294 ft.; 22 stories ^a	n/a
Density ^b	15.6:1 FAR	15.5:1 FAR	n/a
Office Space ^c	255,000 gsf	253,000 gsf	243,000 gsf
Retail Space ^c	5,000 gsf	2,000 gsf	---
Open Space ^c	5,700 gsf ^d	5,500 gsf ^e	5,500 gsf
Parking	40 spaces	39 spaces	39 spaces
Loading ^f	2/2 spaces	2/2 spaces	2/2 spaces

^a Plus one subsurface (basement) level

^b FAR = Floor area ratio

^c gsf = Gross square feet (as calculated under the Planning Code)

^d Indoor "winter garden" and second-floor sun terrace

^e Ground floor indoor and outdoor open space

^f Truck spaces/service vehicle spaces

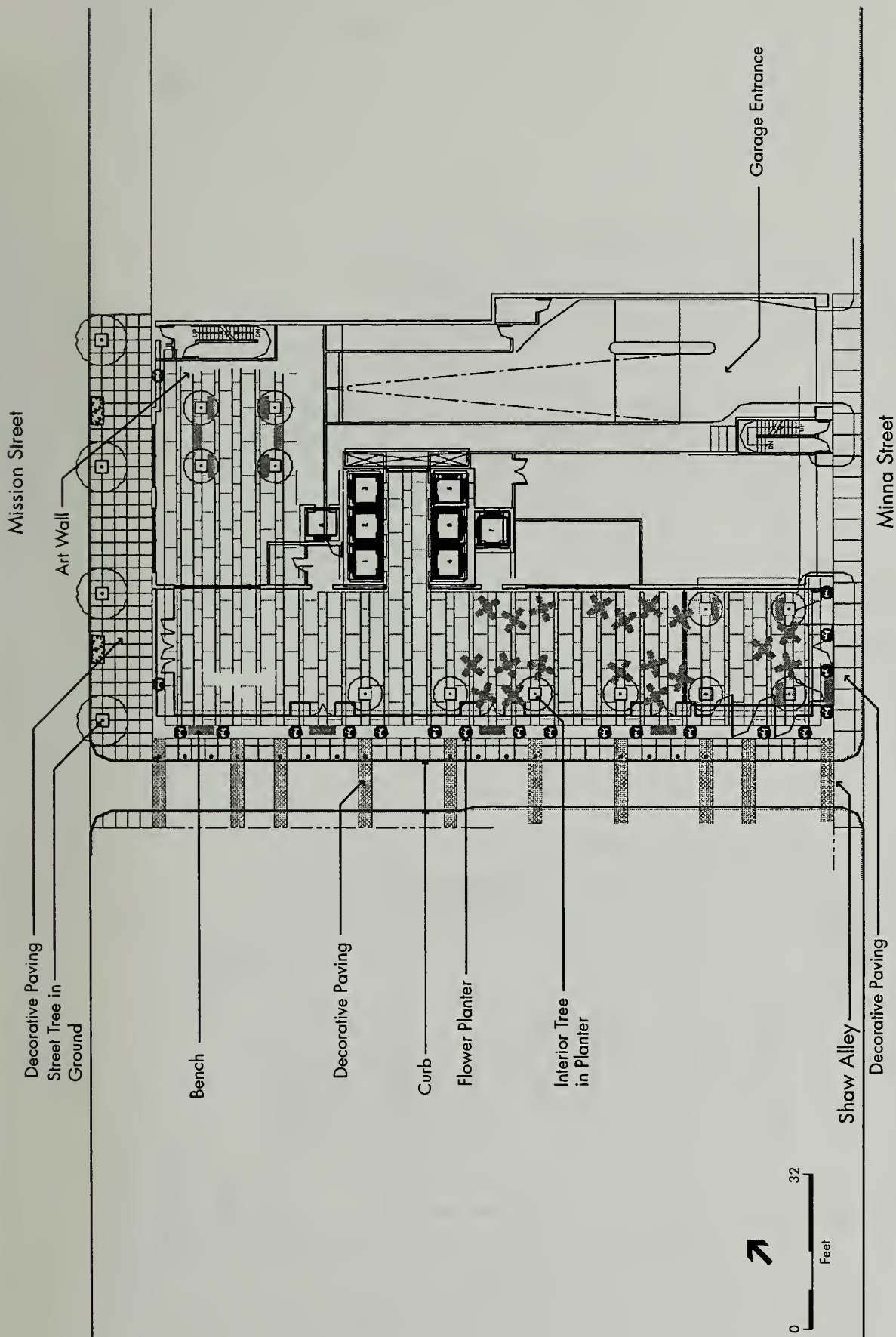
SOURCE: DWI Development Inc.; Environmental Science Associates

The third through 21st floors of the proposed building would contain office space, while the partial second and entire 22nd floor would consist of mechanical space. The average floor size of floors 3 through 21 would be about 13,300 sq. ft. The basement level would contain about 39 short-term valet parking spaces and two service-vehicle loading spaces. Two truck loading docks and a parking ramp would be accessible from Minna Street. See Figures 2 through 8 for drawings of the proposed project design. (See Appendix A for a comparison of the elevations of the original project design with those of the current proposed design.)

The project would include the demolition of an existing structure located at 531 Mission. The existing structure includes approximately 10,000 sq. ft. of office space and approximately 5,000 sq. ft. of retail (restaurant space).³ Total changes in floor area for the site would be a net increase of about 243,000 gross sq. ft. of office space and a net decrease of about 3,000 gross sq. ft. of retail space. The parking and the open space would be new uses on the site.

The sponsor proposes that retail and public open space occupy the Mission Street ground-floor frontage and that a ground floor café be situated on the west (Shaw Alley) side of the project. As noted above, the

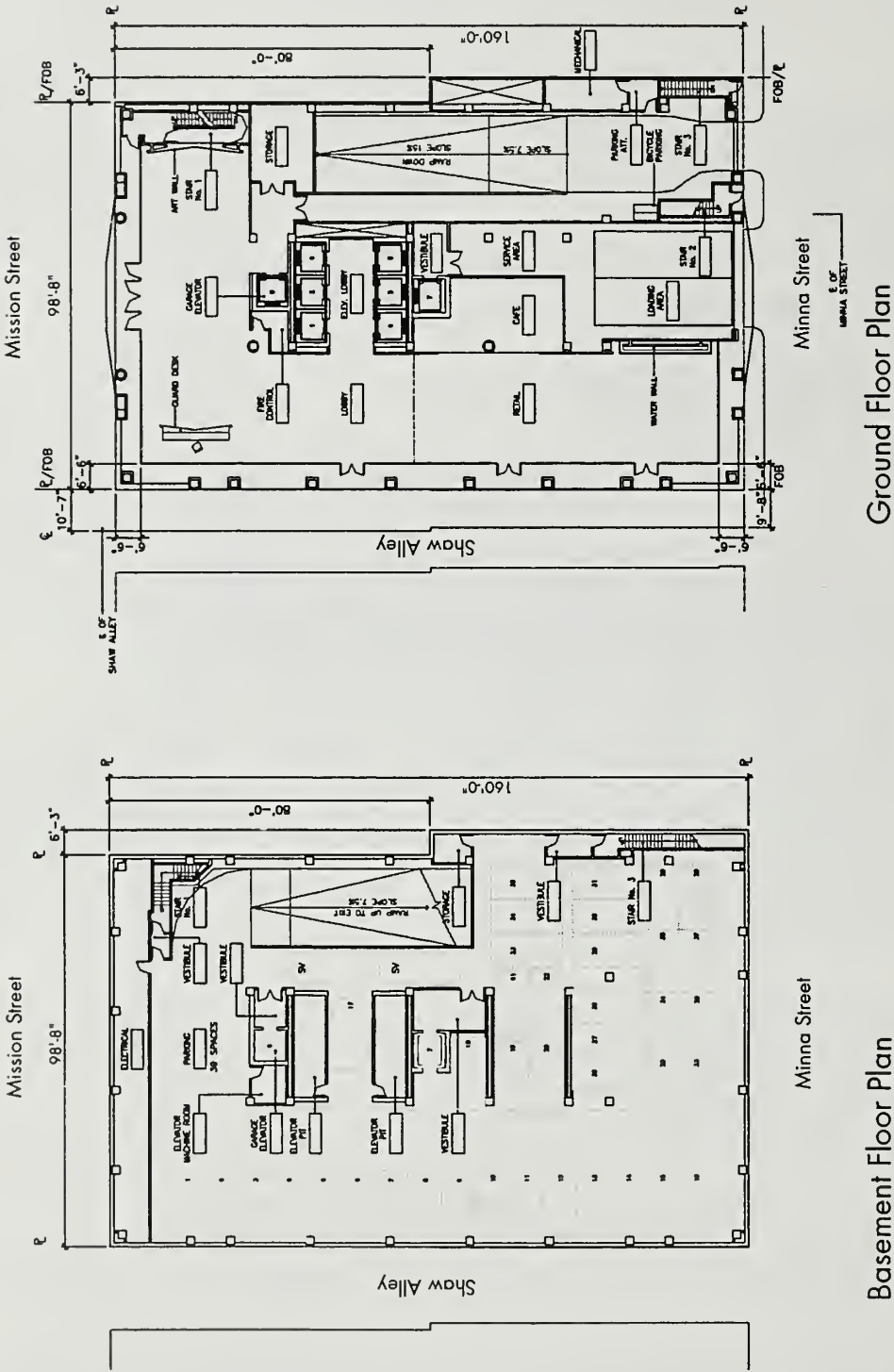
³ Of the existing office space, approximately 2,500 sq. ft. is currently occupied by a yoga studio, but is considered office space because that has been its most consistent use.



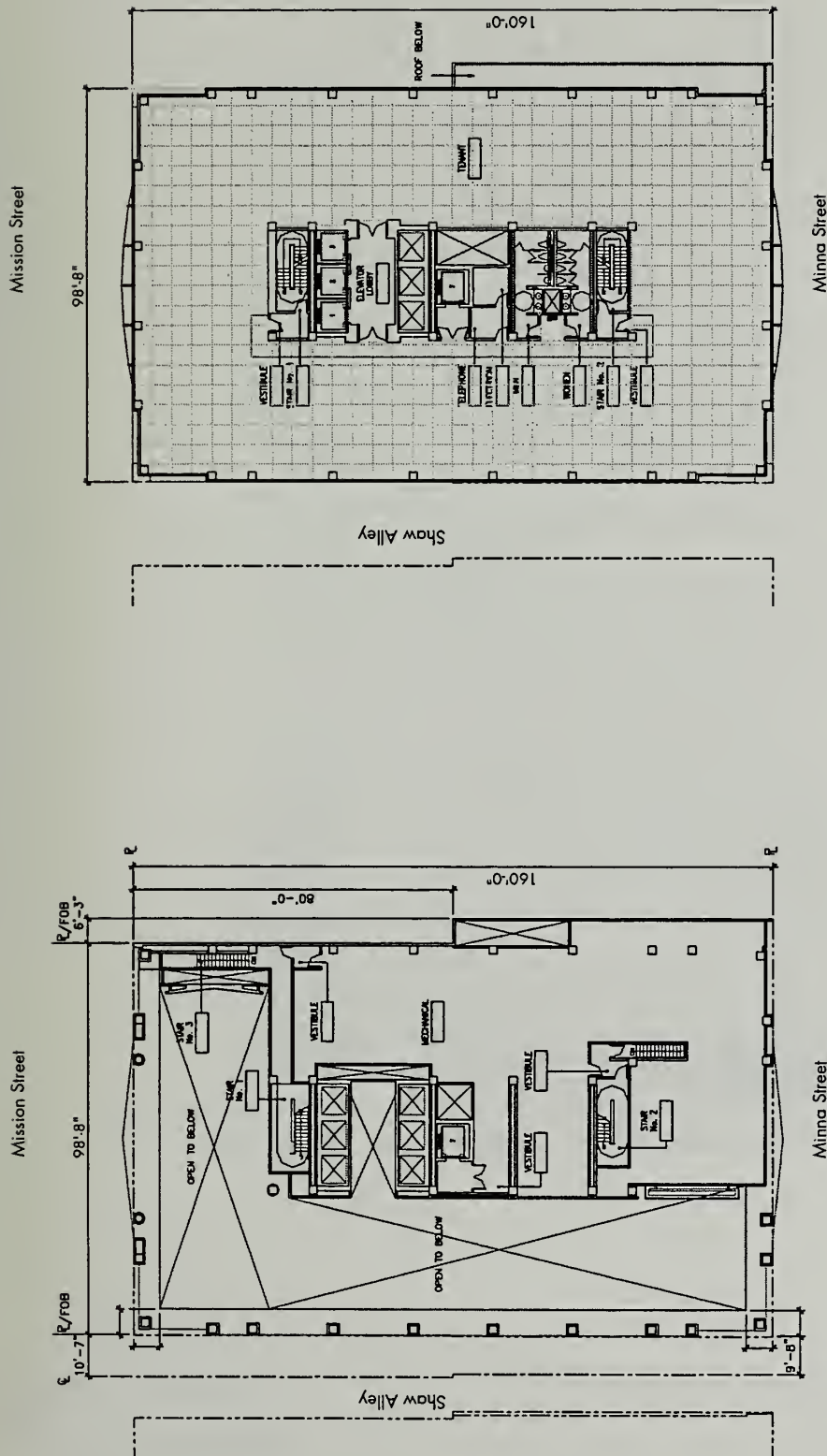
535 Mission Street / 980392

Figure 2
Site Plan

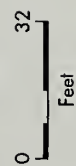
SOURCE: Hellmuth, Obata & Kassabaum



535 Mission Street / 980392 ■ **Figure 3**
 SOURCE: Hellmuth, Obata & Kassabaum
 Basement and Ground Floor Plans



Second Typical Floor Plan



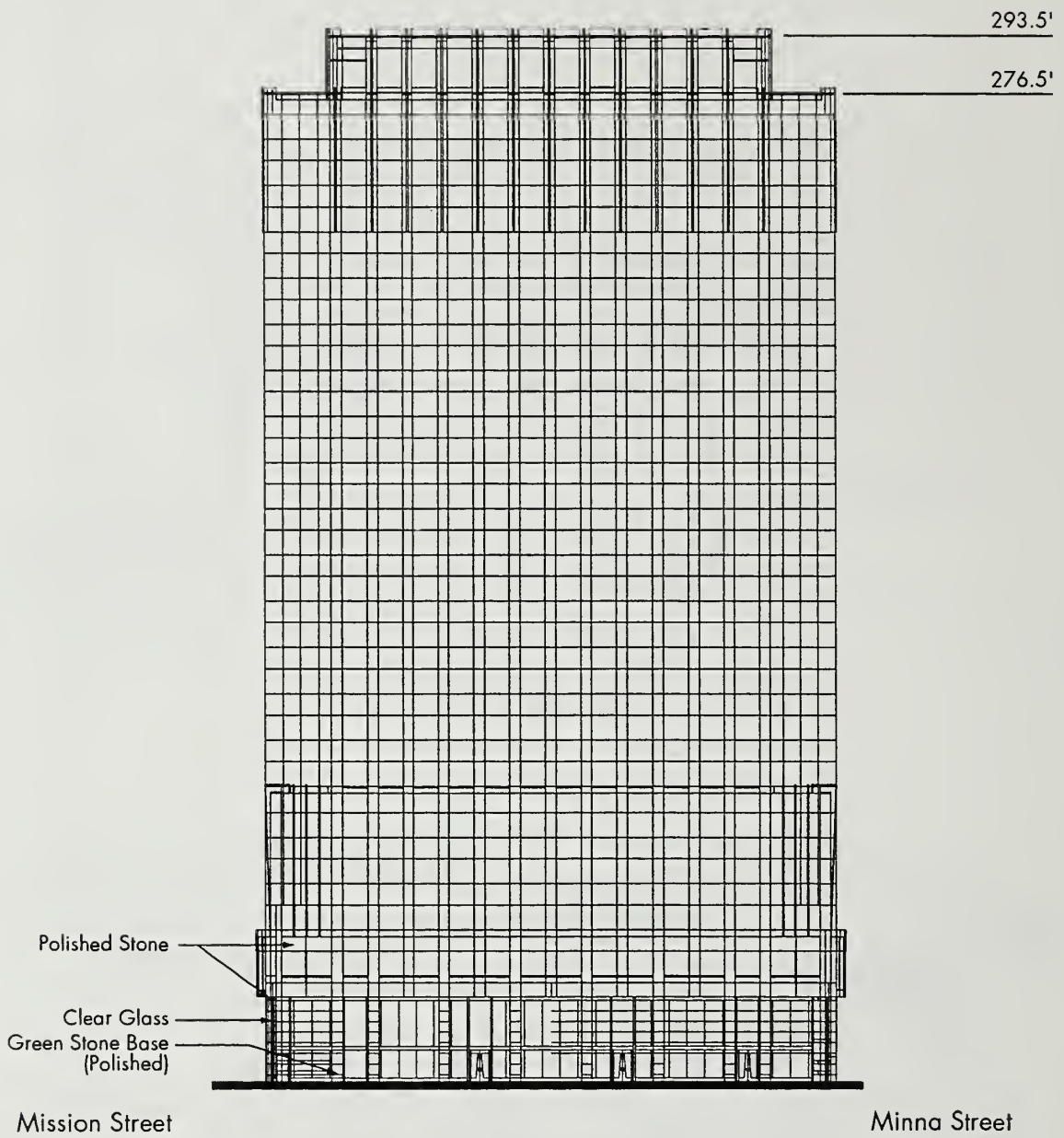
Typical Floor Plan

SOURCE: Hellmuth, Obata & Kassabaum

535 Mission Street / 980392

Figure 4

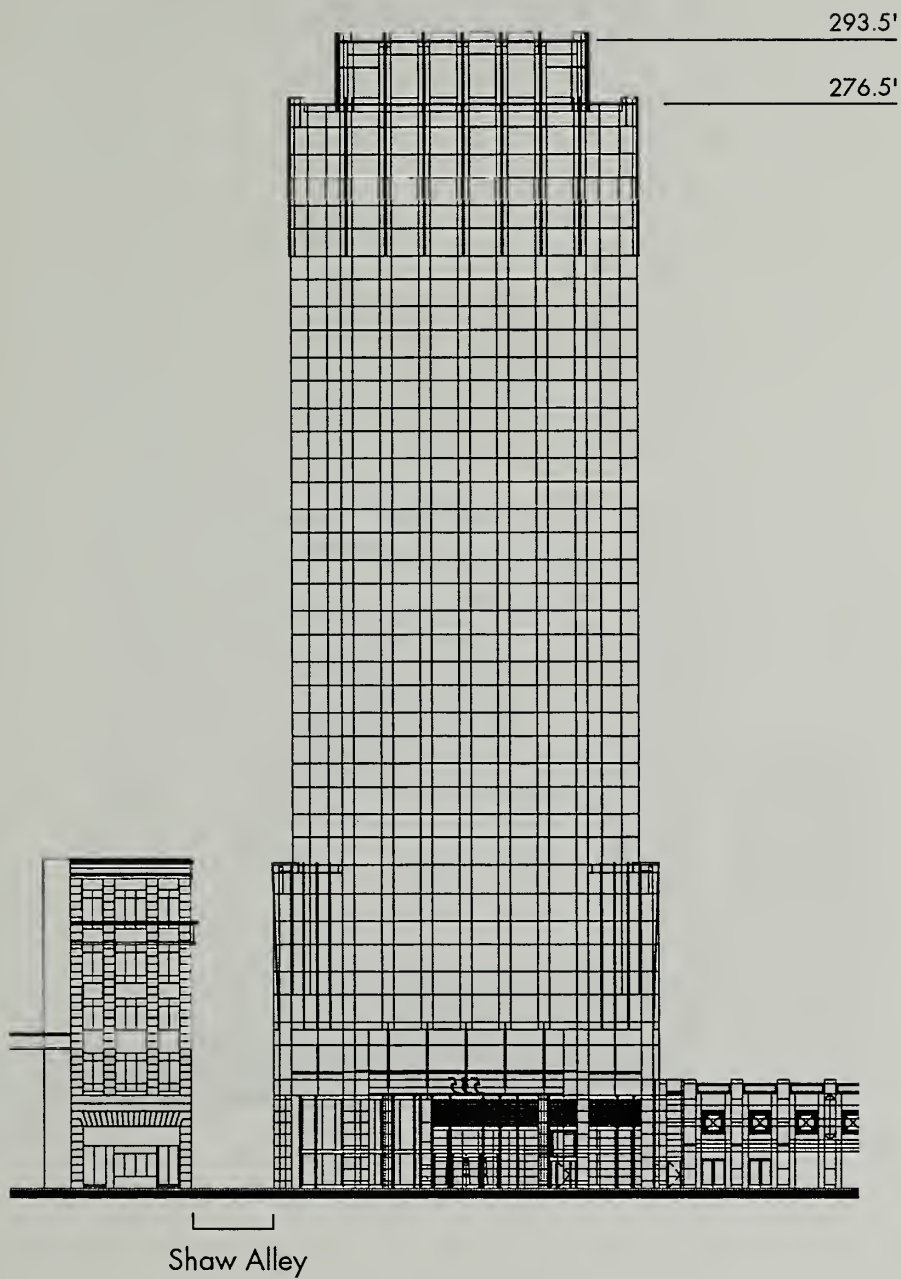
Second Level and Typical Floor Plans



SOURCE: Hellmuth, Obata & Kassabaum

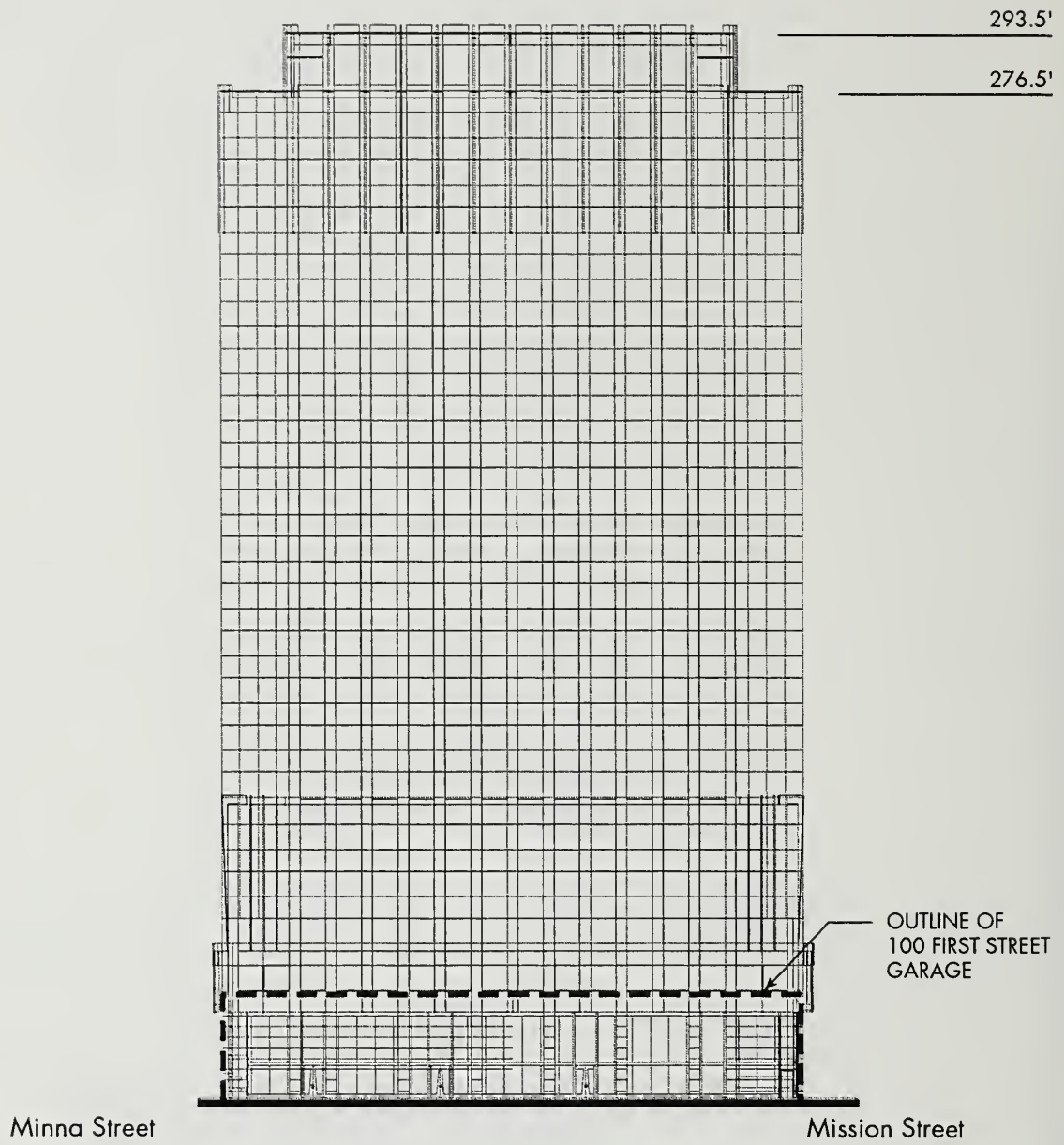
535 Mission Street / 980392 ■

Figure 5
West Elevation (Shaw Alley)



SOURCE: Hellmuth, Obata & Kassabaum — 535 Mission Street / 980392 ■

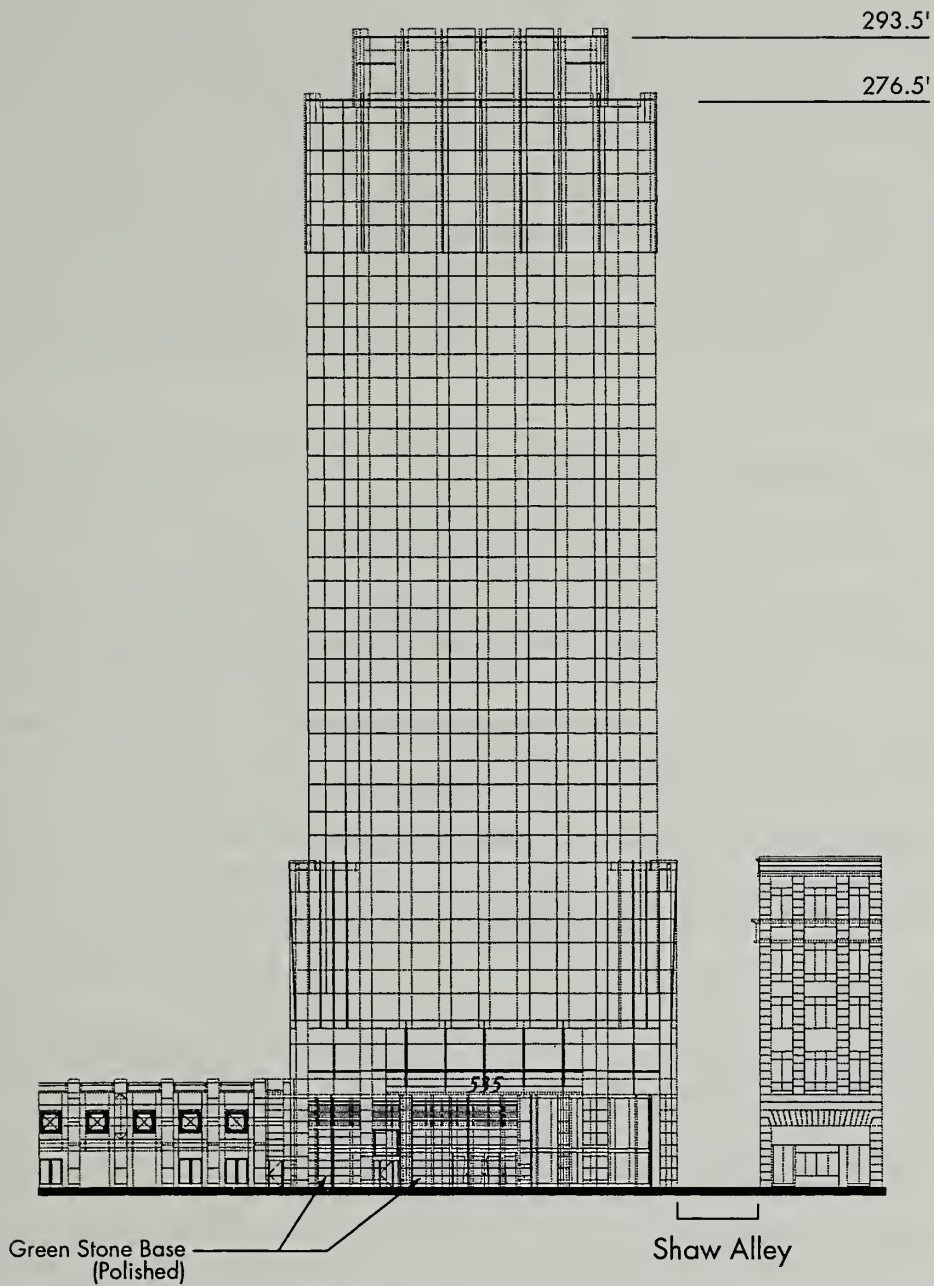
Figure 6
South Elevation (Minna Street)



SOURCE: Hellmuth, Obata & Kassabaum

535 Mission Street / 980392 ■

Figure 7
East Elevation (First Street)



SOURCE: Hellmuth, Obata & Kassabaum

535 Mission Street / 980392 ■

Figure 8
North Elevation (Mission Street)

western facade would be set back 6'-6" feet from Shaw Alley to expand the open space/decorative pavement proposed on the alley. To enhance the sense of openness, this facade would feature a two-story glass wall. The main lobby, on Mission Street at the corner of Shaw Alley, would be a two-story, approximately 24-foot-tall space inside the glass wall. Subject to City approval, the sponsor proposes that Shaw be converted to a pedestrian lane during midday hours, similar to Maiden Lane, Leidsdorf, Commercial, and Belden Streets, with traffic allowed in the early morning and late afternoon only.

The FAR for the proposed project, as calculated under the Planning Code, would be 15.5:1. Given that the base allowable FAR without transferred development rights (TDR) is 9:1 (or 146,880 sq.ft.), the project would include about 106,000 gsf of TDR. The project sponsor has not yet identified buildings from which development rights would be sought. The project would incorporate art as required by Planning Code 149, provide required open space on-site as described above, and meet the childcare requirement by paying an in lieu fee.

C. PROJECT SPONSOR'S OBJECTIVES

The project sponsor has identified the following objectives for the project:

- To develop a partially vacant lot and replace it with an economically viable class A office structure with efficient rentable floor plates suitable for business and occupants in the 21st century.
- To provide a work environment that is close to numerous modes of public transportation, in particular MUNI, BART, AC Transit, and Caltrain.
- To develop a project that enhances, and is enhanced by, pedestrian accessibility to the project site.
- To develop a project that combines ground-floor retail with office space above.
- To replace the existing structure on the project site with a seismically safer structure.
- To provide easily accessible, inviting, street-level, well-lighted public open space integrated into the occupancy and operation of the project.
- To provide competitive office space to both large and small tenants.
- To provide a positive architectural and visual contribution to San Francisco's SOMA business area.
- To provide parking and off-street loading adequate to meet some of the needs of the project and surrounding area.
- To enhance the size and marketability of the project and to support preservation goals by transferring development rights under the City's TDR program to a site that has a 550 foot height limitation and is designated for such TDR.
- To provide a return on investment.

D. PROJECT APPROVAL REQUIREMENTS AND GENERAL PLAN POLICIES

The site is in the C-3-O (Downtown Office) Use district. The basic Floor Area Ratio (FAR) is 9:1. The 550-S Height and Bulk District for the site allows a maximum height of 605 feet, including an optional upper tower extension of 10% of building height. The S controls apply to four parts of a new building: base, lower tower, upper tower and upper tower extension. The general principle is reduced bulk with increased height. In the S district, the maximum length and maximum diagonal dimensions of the lower tower are 160 ft. and 190 ft., respectively. The maximum average floor size for the lower tower is 17,000 sq. ft., and the maximum floor size is 20,000 sq. ft. For the upper tower, the bulk controls are: a maximum length of 130 ft.; a maximum average diagonal measure of 160 ft.; a maximum average floor size of 12,000 sq. ft.; and a maximum floor size of 17,000 sq. ft. Allowable exceptions to these bulk maximums are provided in Section 270 and 272 of the Planning Code, subject to approval under Section 309.

The project sponsor would seek an exception, pursuant to Planning Code Section 309, from the requirement for separation of towers: a 15-foot setback is required above the building's base from the east property line under Sec. 132.1(c), while a setback of approximately 12 feet is proposed. (The required 15-foot setback from the center of Shaw Alley on the west would be met.) The sponsor would also seek an exception to the bulk limitations established by Section 270 of the Planning Code, which establishes a maximum length of 130 feet, a maximum average floor size of 12,000 sq. ft. for upper towers, and an upper tower volume of approximately 1,201,400 cubic feet. The project's upper tower would have a length of 160 feet, an average floor size of about 12,200 sq. ft., and a volume of 1,268,250 cubic feet. In addition, the project sponsor would seek an exception to the requirements of Planning Code Section 148 because the current project would not reduce existing wind speed exceedances of the pedestrian comfort level criterion and would result in one new exceedance of the seating comfort level criterion. In contrast to the 1986 FEIR design, the current project would not require an easement from the Building Code requirement of a five-foot setback (for building walls with windows for fire safety reasons) from the eastern property line.

This Draft SEIR will undergo a public comment period as noted on the cover, including a public hearing before the City Planning Commission. Following the public comment period, responses to written and oral comments will be prepared and published in a Draft Summary of Comments and Responses document. The Draft SEIR will be revised as appropriate and presented to the City Planning Commission along with the 1986 FEIR for certification as to accuracy, objectivity, and completeness. No approvals or permits may be issued before the Final SEIR is certified. The Department of Building Inspection would require a building permit for the construction of a new building. The Department of Public Works would require a minor street encroachment permit to rebuild the curb for access to the proposed parking garage and to repave Shaw Alley, and would have to approve the closure of Shaw Alley for use as a pedestrian lane during midday hours.

On November 4, 1986, the voters of San Francisco passed Proposition M, the Accountable Planning Initiative, which established eight Priority Policies. These policies are: preservation and enhancement of neighborhood-serving retail uses; protection of neighborhood character; preservation and enhancement of affordable housing; discouragement of commuter automobiles; protection of industrial and service land uses from commercial office development and enhancement of resident employment and business

ownership; earthquake preparedness; landmark and historic building preservation; and protection of open space. Prior to issuing a permit for any project that requires an Initial Study under the *California Environmental Quality Act* (CEQA), or adopting any zoning ordinance or development agreement, the City is required to find that the proposed project or legislation is consistent with the Priority Policies.

The City and County of San Francisco *General Plan* provides general policies and objectives to guide land use decisions. The proposed project would not obviously or substantially conflict with the General Plan. In general, potential conflicts with the *General Plan* are considered by the decisions-makers (normally the Planning Commission) independently of the environmental review process, as part of the decision to approve, modify or disapprove a proposed project. Any potential conflict not identified here could be considered in that context, and would not alter the physical environmental effects of the proposed project. Relevant policies of the General Plan are discussed in the 1986 Final EIR and the Land Use and Zoning section in Chapter III of this SEIR.

CHAPTER III

ENVIRONMENTAL SETTING AND IMPACTS

A. LAND USE AND ZONING

The land use conditions of the project site are similar to those described in the Land Use and Zoning section of the 1986 FEIR, however several changes in circumstances have occurred since that document was prepared. Most notably, one of the buildings on the project site was demolished in 1991. Other changes in the area include construction of nearby buildings and proposals for several other buildings.

At the time of the FEIR, two buildings were located on the project site: 531 Mission Street, a three-story commercial building, and 535 Mission Street (the Goodyear Building), a four-story commercial building. Subsequent to a fire that damaged it heavily, 535 Mission Street was demolished in 1991. The western two-thirds of the site is therefore now vacant. The 531 Mission Street building is composed of 10,000 sq. ft. of office space (2,500 sq. ft. of which functions as a yoga studio) and 5,000 sq. ft. of retail (restaurant) space.

The FEIR had noted the beginnings of office development in the project vicinity: buildings at 100 First Street at Mission and at 71 Stevenson Street were under construction in 1986, and a building at 49 Stevenson Street had been approved; all of these buildings are now built and occupied. No other projects have been completed since the FEIR was certified, but an office building at 101 Second Street at Mission is currently under construction (occupancy is planned for December 1999), as is another office building at 199 Fremont Street at Howard. An office project has been approved at One Second Street at Stevenson, but is not under construction. A previously approved office project at 524 Howard Street, near First Street (on the same block as the 535 Mission site) has been re-reviewed by the Planning Department and re-authorized. A highrise condominium project, formerly known as Natoma Mews and currently called The Century, is under construction southwest of the site, on the western portion of what had been a surface parking lot. Another condominium project is under construction on Second Street between Howard and Folsom, within the Yerba Buena Center (YBC) Redevelopment Area, and a hotel at Third and Howard Streets, also within the YBC area, was recently completed. The area immediately south of the project site remains in use as a surface parking lot, with garage parking in the Transbay Terminal. A former parking lot at the corner of Ecker and Mission Streets is now occupied by Leadership High School, a San Francisco Unified School District charter school.

In addition to development projects that have been approved or are under construction, there are a number of development proposals being evaluated in the area, and planning for the Transbay Terminal area as a whole has been undertaken by the City, the San Francisco Redevelopment Agency, and most recently, a multi-agency panel established by the Metropolitan Transportation Commission (MTC). Potential future development projects include office buildings at 554 Mission Street (across Mission Street from the project site), and at the intersection of First and Howard Streets. These and other specific

projects would contribute to projected future housing and employment growth in the area, and are being analyzed in project-specific CEQA documents.

The project is in the C-3-O (Downtown Office) use district and a 550-S (550-foot height limit; up to 605 feet with permitted upper tower extension, with limitations on maximum plan dimensions) height and bulk district. Like the project analyzed in the 1986 FEIR, the current project would require an exception pursuant to Planning Code Section 309 in regard to the required separation of towers, which in this case calls for a 15-foot setback from the east property line above 103 feet under Sec. 132.1(c),⁴ but setback of only 12 feet is proposed. In regard to ground-level winds, the project cannot feasibly be designed to avoid exceeding 11-mph pedestrian comfort criterion of Sec. 148(a) and so would require an exception.

The sponsor would also seek an exception to the bulk limitations established by Section 270 of the Planning Code, which establishes a maximum length of 130 feet, a maximum average floor size of 12,000 sq. ft. for upper towers, and an upper tower volume of approximately 1,201,400 cubic feet. The project's upper tower would have a length of 160 feet, an average floor size of about 12,200 sq. ft., and a volume of approximately 1,268,250. In addition, the sponsor would seek an exception to the wind seating-comfort criterion established by Section 148, which requires ground-level wind currents not to exceed 7 mph more than 10% of the time. Some of the General Plan policies discussed in the 1986 FEIR have changed since 1986, however some of the policies still relevant to the proposed project are listed below. For more specific information regarding the zoning requirements for this site and the compatibility of the project with the General Plan (including the Downtown Plan), see the 1986 FEIR. See Table 3 in the Urban Design section of the 1986 FEIR for a complete list of the Urban Design policies of the *General Plan* relevant to the proposed project.

COMMERCE AND INDUSTRY ELEMENT

Objective 3, Policy 1: Promote the attraction, retention, and expansion of commercial and industrial firms which provide employment improvement opportunities for unskilled and semi-skilled workers.

Objective 4, Policy 1: Maintain and enhance a favorable business climate in the city.

Objective 4, Policy 2: Promote and attract those economic activities with potential benefit to the city.

URBAN DESIGN ELEMENT

Objective 1, Policy 1: Recognize and protect major views in the city, with particular attention to those of open space and water.

Objective 1, Policy 3: Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.

⁴ Based on 1.25 times the 82.5-foot-width of Mission Street.

Objective 1, Policy 6: Make centers of activity more prominent through design of street features and by other means.

Objective 2, Policy 6: Respect the character of older development nearby in the design of new buildings.

Objective 3, Policy 1: Promote harmony in the visual relationships and transitions between new and older buildings.

Objective 3, Policy 3: Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations.

Objective 3, Policy 6: Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction.

DOWNTOWN PLAN

Objective 13, Policy 1: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing and proposed development.

Objective 15, Policy 2: Assure that new buildings contribute to the visual unity of the city.

Objective 15, Policy 3: Encourage more variation in building facades and greater harmony with older buildings through use of architectural embellishments and bay or recessed windows.

Objective 16, Policy 1: Conserve the traditional street to building relationship that characterizes downtown San Francisco.

Objective 16, Policy 2: Provide setbacks above a building base to maintain the continuity of the predominant streetwalls along the street.

Objective 16, Policy 3: Maintain and enhance the traditional downtown street pattern of projecting cornices on smaller buildings and projecting belt courses on taller buildings.

Objective 16, Policy 4: Use designs and materials and include activities at the ground floor to create pedestrian interest.

B. VISUAL QUALITY

SETTING

The visual quality setting of the project site is similar to that described in the Urban Design setting section of the 1986 FEIR (pp. 40-45). The two primary changes to the visual setting are those same changes described above in section III.A, Land Use: demolition of 535 Mission Street on the project site, and the construction of new structures in the vicinity.

As explained in the 1986 EIR, the project vicinity is primarily devoted to large and small office buildings with ground-floor retail. Numerous high-rise buildings are located near the project site, including at Market and First Streets, Stevenson Street between First and Second Streets, Jessie and Ecker Streets, Second Street at Mission (under construction), and adjacent to the project site to the east at 100 First Street. A 48-story residential tower ("The Century") is under construction between Minna and Natoma Streets, east of Second Street. In addition, high-rise office buildings at One Second Street at Mission and at 524 Howard Street, near First Street, have been approved for development.

To the west of the project site, across Shaw Alley, is a narrow five-story brick office structure. Directly across Mission from the project site is Golden Gate University, a massive concrete structure with a series of overhanging levels and a plaza fronting Mission Street. To the west of Golden Gate University are two vacant lots on either side of a six-story office building built in 1919; all three parcels are the proposed site for the 31-story 554 Mission Street office tower. To the east of Golden Gate University, across Ecker Street, is Leadership High School, constructed of "portable" classroom structures.

IMPACTS

Evaluation of potential project impacts on the existing visual character of the site and surroundings requires analysis of the elements of the project that would be introduced and how those changes (separately or collectively) would affect the character of the site and views of it from off-site locations. Impacts to the visual quality or character of a site would be considered significant if site changes would result in substantial demonstrable negative aesthetic effects, would substantially degrade or obstruct scenic views or vistas currently observed from public areas, or would result in the production of substantial light or glare.

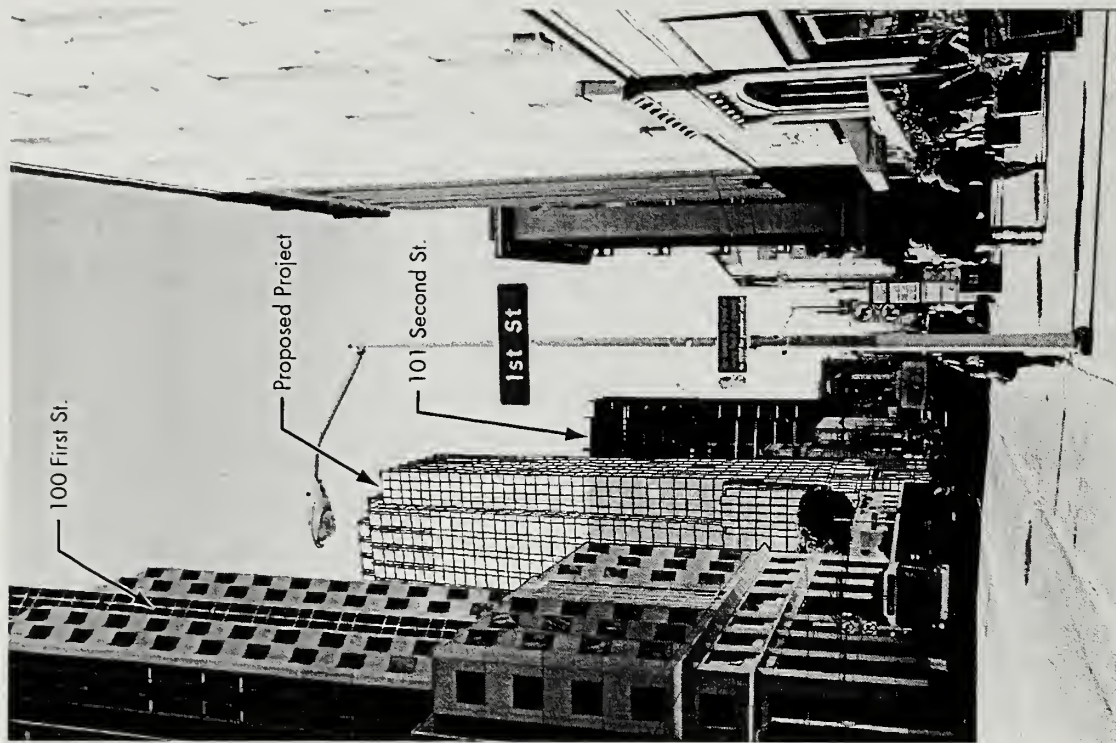
The current proposed project would demolish the existing three-story 531 Mission Street building. This building is a simple rectangular, brick facade structure with large retail windows on the ground-floor and a series of five smaller, double-hung windows on each of the upper two floors. The proposed project would differ visually from the project analyzed in the 1986 FEIR as a result of the four differences between the two projects described in the Introduction section of this document. Those changes include: 1) street and sidewalk improvements to Shaw Alley (adjacent to the project site on the west) and a 7-foot building setback on the west that would effectively widen the east sidewalk of Shaw Alley; 2) no asymmetrical angle to be "cut away" from the building's southeast corner; 3) a more "squared off" top of the building; and 4) 21 stories, rather than 23 stories (although the height would remain at 300 feet).

As discussed in the Urban Design environmental impacts section of the 1986 FEIR, the project site would be visible from long-range viewpoints as well as neighboring buildings and street-level areas in surrounding blocks. Long-range viewpoints would include Twin Peaks, Potrero Hill, and the Bay Bridge. A variety of short- and middle-range views would be available from throughout the surrounding neighborhood. To clearly demonstrate the physical differences between the 1986 and current designs, and provide updated views of the site, five photosimulations of the current proposed project have been provided as Figures 9 through 13.

As with the previously analyzed project, the proposed project would be a new highrise within a densely developed urban area with numerous other office towers, consistent with the site's zoning, and generally consistent with the urban design policies of the General Plan. As such, the project would not have a substantial effect on a scenic vista or views from public areas, would not result in a substantial demonstrable negative aesthetic effect, and would not produce new substantial light or glare. The project would therefore not have significant visual quality effects on the environment.



EXISTING VIEW LOOKING WEST DOWN MISSION STREET

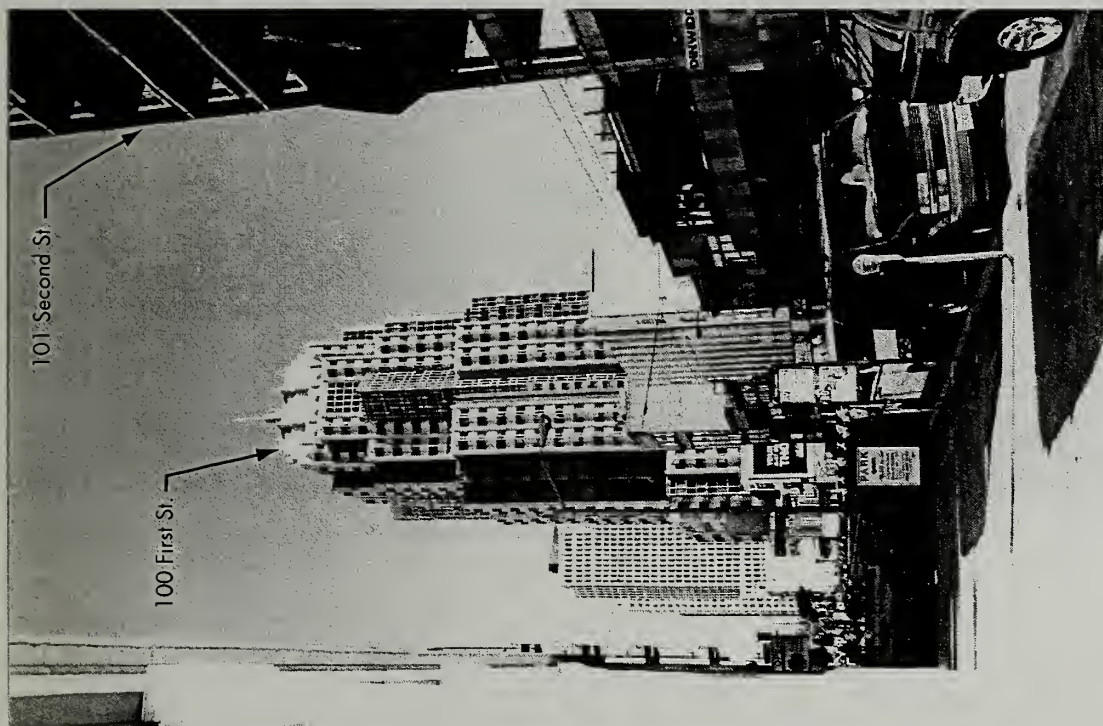


PROPOSED VIEW LOOKING EAST DOWN MISSION STREET

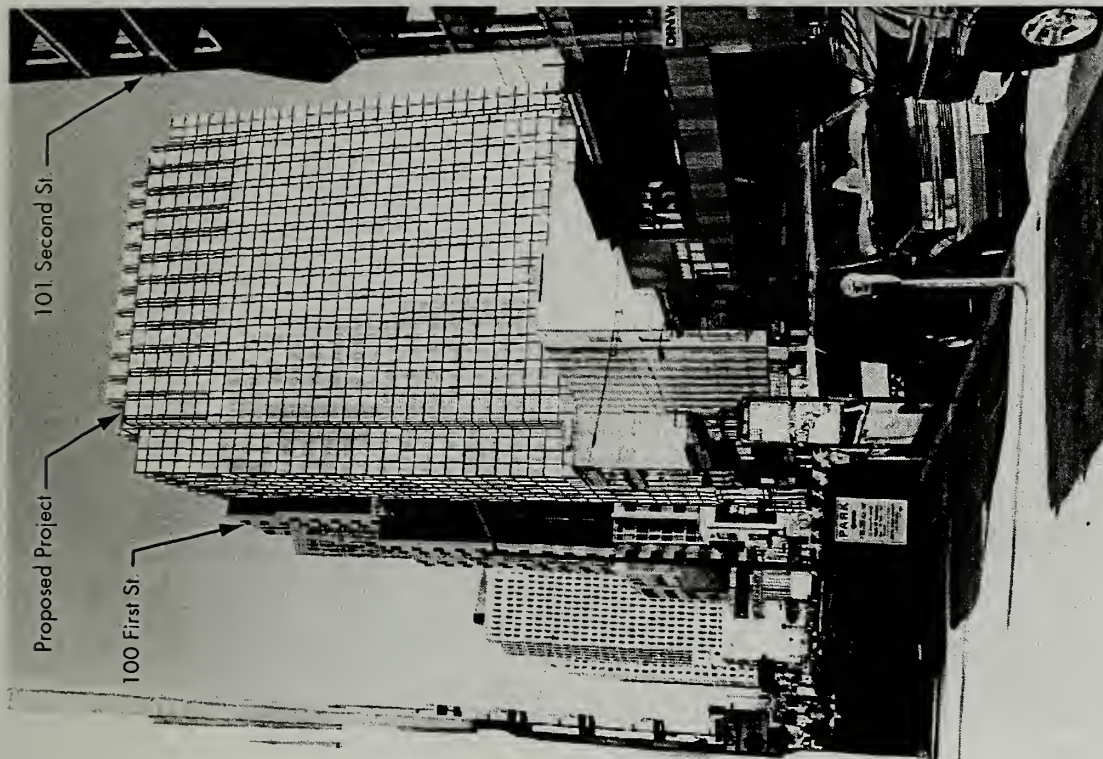
SOURCE: Hellmuth, Obata & Kassabaum

535 Mission Street / 980392

Figure 9
Existing and Proposed Street Views



EXISTING VIEW LOOKING EAST DOWN MISSION STREET



PROPOSED VIEW LOOKING EAST DOWN MISSION STREET

SOURCE: Hellmuth, Obata & Kassabaum

535 Mission Street / 980392 ■

Figure 10
Existing and Proposed Street Views



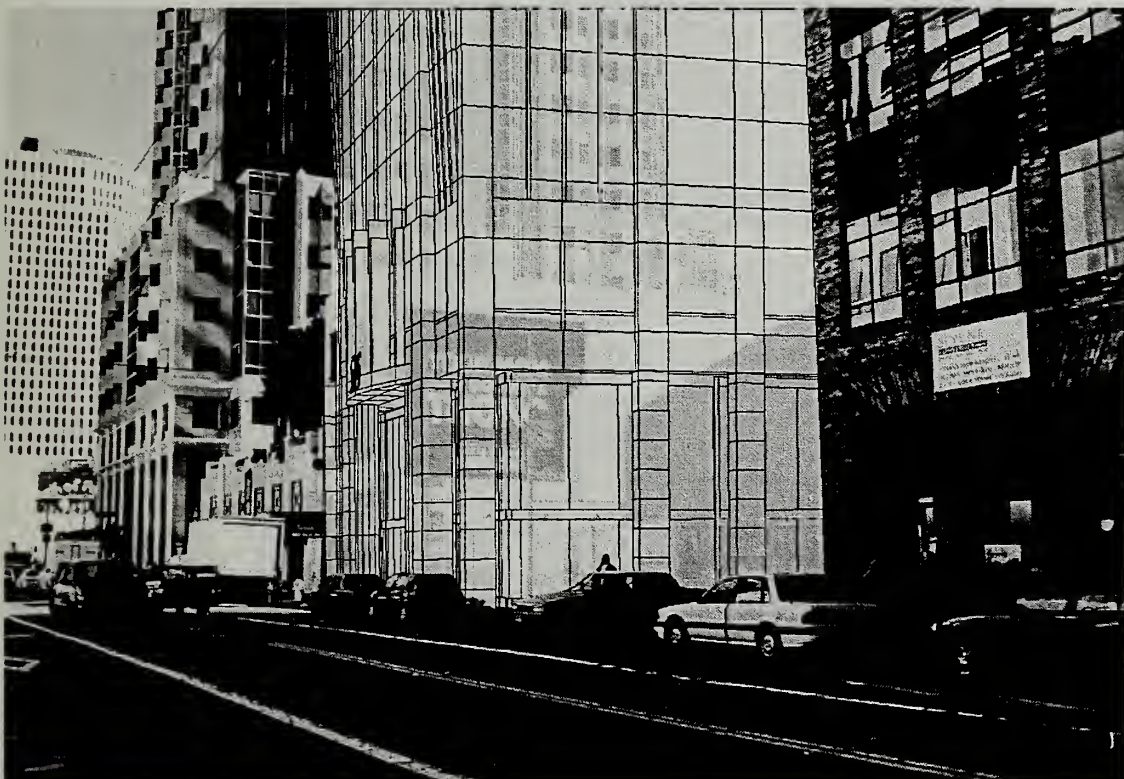
EXISTING CLOSE-IN VIEW FROM MISSION STREET
LOOKING WEST



PROPOSED CLOSE-IN VIEW FROM MISSION STREET
LOOKING WEST



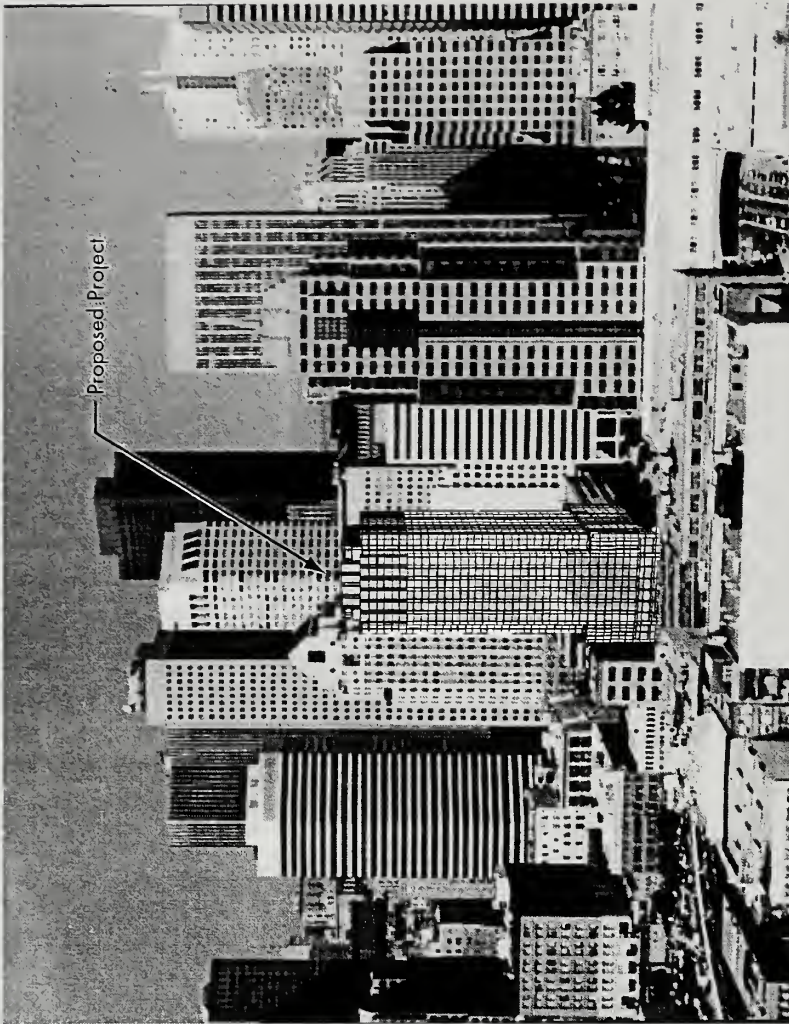
EXISTING CLOSE-IN VIEW FROM MISSION STREET
LOOKING EAST



PROPOSED CLOSE-IN VIEW FROM MISSION STREET
LOOKING EAST



EXISTING CITYSCAPE VIEW FROM SOUTH OF MARKET LOOKING NORTH



PROPOSED CITYSCAPE VIEW FROM SOUTH OF MARKET LOOKING NORTH

SOURCE: Hellmuth, Obata & Kassabaum

535 Mission Street / 980392

Figure 13 Existing and Proposed Cityscape View

C. TRANSPORTATION, CIRCULATION AND PARKING

SETTING

The project site is within an area of the city that is subject to traffic congestion during the afternoon commute, including the p.m. peak hour, which is the hour of heaviest traffic volumes and which typically occurs between 4:30 p.m. and 5:30 p.m. In particular, streets leading to the Bay Bridge on-ramps, including First Street, Harrison Street, and Bryant Street (and sometimes Second and Folsom Streets leading to Essex Street) are congested, and drivers experience long delays in reaching the on-ramps. Drivers heading for I-80 westbound/U.S. 101 southbound also experience congestion and delays, particularly around the on-ramp at Fourth and Harrison Streets. Conditions on the I-80 freeway typically are also congested, with the worst congestion eastbound occurring near the Sterling Street on-ramp (near Second and Bryant Streets), and westbound, between Fifth Street and the U.S. 101 junction (just west of Ninth Street).⁵

The current Transportation network is essentially the same as that described in the 1986 FEIR (pp. 49-52), except for the freeway ramps on Mission Street at Beale and Main Streets that were demolished in the aftermath of the 1989 Loma Prieta earthquake. In addition, there have been some changes to the transit service provided by MUNI electric trolley and motor coach lines in the project area (see Figure 14 for current transit routes and stops in the project area). Existing operating conditions at First and Harrison are the same as those described in the 1986 FEIR (LOS F). Existing conditions at Beale and Mission have improved (from LOS E to B) and at First and Mission have degraded (from LOS D to E).

IMPACTS

Transportation impacts analyzed in the 1986 FEIR (pp. 94-112) were reevaluated for this SEIR in light of changes in standard methodology for traffic analysis as well as changes in circumstances since certification of the 1986 FEIR. These changes include replacement of the now-outdated horizon year for cumulative analysis used in the 1986 FEIR, the 1989 Loma Prieta earthquake-caused changes to the regional freeway system, particularly in downtown San Francisco, and information on specific and projected future development projects, jobs, and housing in the project vicinity.

The cumulative future environment described in the 1986 FEIR was based on growth projections in population and employment to the year 2000, which no longer is relevant to analyses conducted in 1999. Current forecasts of cumulative conditions, as used for a recent assessment of the Transbay Redevelopment Study Area, project to 2015 conditions, using an adjusted version of *Projections '96*, published by the Association of Bay Area Governments (ABAG).⁶

⁵ Mission Bay Final Supplemental EIR (Case No. 96.771E), p. V.E.7.

⁶ *Projections '96* was the latest available data at the time the analysis was completed. ABAG's subsequent *Projections '98* contains citywide population and employment estimates for 2015 that are within about 2 percent of the comparable Redevelopment Agency consultants' forecasts used in this report. The Redevelopment Agency consultant's forecasts can be found in Keyser Marston Associates, Inc., *San Francisco Cumulative Growth Scenario: Final Technical Memorandum*, prepared for the San Francisco Redevelopment Agency, March 30, 1998.

Traffic volumes and circulation patterns on local streets in downtown San Francisco have changed from what they were (and what they were projected to be in the future) when analyzed in the 1986 FEIR because of circulation changes attributable to the 1989 Loma Prieta Earthquake. Traffic congestion has increased substantially in parts of the South of Market area since the analysis was performed for the 1986 FEIR, particularly on streets leading to the Bay Bridge and other freeway approaches. As described above, streets leading to the Bay Bridge on-ramps, including First Street, Harrison Street, and Bryant Street (and sometimes Second and Folsom Streets leading to Essex Street), are congested during the afternoon commute and drivers experience long delays in reaching the on-ramps. Drivers heading for I-80 westbound/U.S. 101 southbound also experience congestion and delays, particularly around the on-ramp at Fourth and Harrison Streets.⁷

The 1986 FEIR estimated vehicle trip generation for the original project based on travel demand assumptions derived from the 1984 Downtown Plan EIR. The City's current and accepted methodology for assessing traffic impacts uses assumptions based on survey data compiled in 1993 for the Citywide Travel Behavior Survey. Utilizing these assumptions and methodology, the current project would generate about 750 daily vehicle trips, of which about 62 vehicle trips (60 outbound and 2 inbound) would occur in the p.m. peak hour (both figures are net new and discount for existing land uses on the site), when analyzed using current assumptions. (This compares to about 80 outbound vehicle trips during the p.m. peak hour described in the 1986 FEIR analysis; the 1986 EIR did not report inbound trips.) Travel demand calculations are on-file at the San Francisco Planning Department.

The estimated 62 vehicle trips would not meaningfully affect local intersections in the p.m. peak hour, as these trips would be dispersed among various nearby intersections, depending on the location at which drivers were to find parking. (As noted in Table 1, the project would provide 39 parking spaces, which would be valet short-term spaces.) Of the three intersections analyzed in the 1986 FEIR, one (First and Harrison Streets at the Bay Bridge/I-80 Eastbound On-Ramp) was at level of service (LOS) F (poor operations; intersection over capacity and/or vehicles experience long delays) under then-existing conditions, and this finding remains accurate for this intersection.⁸ Another intersection studied, First and Mission Streets, has degraded to LOS E from LOS D in 1986, as traffic congestion on First Street has increased with more Bay Bridge-bound traffic using First Street since the Embarcadero Freeway and connecting ramps were demolished.

The third intersection studied, Beale and Mission Streets, has improved from LOS E to LOS B, as a result of demolition of the Beale Street On-ramp to I-80. The 1986 FEIR found that project traffic would result in only an incremental change in operations (no change in LOS) at these three intersections, which would not be considered a significant effect. The reduced number of added vehicle trips that would be generated by the current proposed project also would result in only an incremental change in operations (no change in LOS) at these three intersections, which would not be considered a significant effect. Therefore, despite the increased congestion in the project vicinity, the conclusion of the 1986 FEIR remains valid.

⁷ Mission Bay Final Supplemental EIR (Case No. 96.771E), p. V.E.7.

⁸ Current traffic operating conditions in the project area presented in this SEIR were analyzed as part of the Transbay Redevelopment Area Transportation Study, April 1998.

Traffic generated by interim cumulative development (conditions that are anticipated to exist in the project vicinity if all of the nearby projects that are currently under review or already approved but not yet built are completed [by an assumed 2005]) would increase p.m. peak-hour volumes in the Transbay Study Area by about 13 percent over existing conditions in the westbound (outbound from downtown) direction on Harrison, Howard, and Mission Streets.⁹ Southbound volumes on streets east of Second Street would increase by about 9 percent (on First, Beale, and Spear Streets), and by nearly 15 percent on Second Street and streets west of Second (on New Montgomery Streets, as well as on Fourth and Sixth Streets, outside the Study Area). The increased traffic volumes would cause conditions at the Mission/First intersection to deteriorate to LOS F, largely a function of vehicles destined for the Bay Bridge and other freeway on-ramps. Conditions at the First/Harrison intersection would continue to operate at LOS F, and the Mission/Beale intersection would remain acceptable (LOS D or better). Cumulative increases in congestion would occur whether or not the current project is implemented, and project traffic impacts would not be considered “considerable” or significant in this context.

Based on traffic analysis for the Transbay Study Area,¹⁰ which assumed a development comparable to the project on the 535 Mission block, cumulative conditions at the First Street/Harrison Street/I-80 On-ramp intersection will remain unacceptable (LOS F) in the future, as stated in the 1986 FEIR, while conditions at First and Mission Streets will likely remain unacceptable (LOS E or F) and operations at Beale and Mission Streets will remain acceptable (LOS B). The Transbay Area traffic analysis shows that, with anticipated development in the area south of Market Street between San Francisco Bay and the Yerba Buena Center area, long-term traffic congestion is likely to increase such that intersections on Second Street (at Folsom), Third Street (at Folsom, Harrison, Bryant, King, and possibly Howard), and Fourth Street (at Howard and King) will operate at unacceptable levels of service by 2015.

Projected cumulative traffic conditions are expected to occur whether or not the current proposed project is implemented, and based on forecasts prepared by the Planning Department, the 535 Mission Street building would represent between about 2 percent and 7 percent of anticipated office development in the Transbay Area between now and 2015, and a substantially smaller percentage of total development in the area, depending on the development scenario that were to unfold over the next 15 years. The project contribution to cumulative operating conditions at any given intersection would be virtually unnoticeable in the context of traffic from cumulative sources, and would not be considered “considerable” or significant. The conclusion of the 1986 FEIR, that the project would contribute incrementally to cumulative traffic increases, remains valid.

Regarding transit, the current project would generate approximately 165 transit trips. Because the project site has good transit access (less than one-half block from the Transbay Terminal, one block from BART Montgomery Station, plus access to more than 15 MUNI lines and MUNI Metro within one block and access to Golden Gate Transit and SamTrans within a block), these transit trips, distributed over numerous lines and carriers, would not be expected to measurably affect transit operating conditions. The conclusion of the 1986 FEIR, that the project would not have a noticeable effect on transit levels of service, remains valid.

⁹ Discussion of interim cumulative traffic conditions is based on a memorandum from Korve Engineering to the San Francisco Planning Department, dated June 15, 1999.

¹⁰ Korve Engineering, *Transbay Redevelopment Area Transportation Study*, April 1998.

By 2015, absent service expansion, both AC Transit and East Bay BART service would operate at well over 100 percent of capacity. Assuming BART implements planned improvements, that system would have adequate capacity. In June 1999, the AC Transit Board of Directors approved Phase II of AC's Transbay Comprehensive Service Plan (CSP) calling for improving Transbay service by extending the hours of operation on several lines, increasing frequencies, adding new Transbay lines, and adjusting existing Transbay lines to make service in the East Bay less circuitous. Phase II is expected to be implemented in September, 1999. Because the precise levels of planned service increases are not currently known, the analysis in this SEIR conservatively assumes that AC Transit would have to further increase transbay service capacity by 2015 if it is to accommodate increased ridership. Because of the relatively limited effect of the project in the context of long-range cumulative growth, the conditions in the 2015 cumulative scenario would occur with or without the project. Therefore, the project would not have a significant impact on transit services and capacity.

The project would create a long-term parking demand for about 110 parking spaces and short-term parking demand for 10 equivalent daily spaces, for a total parking demand of about 120 daily spaces, compared to a total parking demand of about 190 daily spaces estimated in the 1986 FEIR. Because the project would provide about 39 parking spaces, with valet operations, parking demand would not be met by the on-site supply. While there are numerous parking garages and surface lots within three blocks of the site (including the garage adjacent to the site on the east and the Transbay Terminal immediately south), some nearby surface lots have been developed in recent years, and others are on sites proposed for development, or will be unavailable during Caltrans' retrofit of the west approach to the Bay Bridge. As a result, a new unmet parking demand generated by the project (for about 80 spaces), would have to be met outside the project area, or drivers would have to compete for a limited supply of off-street parking. It is likely that some drivers, faced with expensive and limited off-street parking opportunities, would be forced to walk long distances and may consider utilizing transit in some circumstances.

In the context of San Francisco's "Transit First" policy, parking shortfalls are not considered to be a significant environmental effect. This is because San Francisco enjoys the highest level of transit accessibility of any jurisdiction in the state, and alternatives to the use of single-occupancy automobiles, particularly in the downtown area, are extensive. Also, past experience indicates that parking deficits are generally short term inconveniences, and that drivers learn to park farther from their destination, switch their mode of travel, or adjust their travel patterns to arrive at times of the day when more parking is available. In light of this experience and long-standing policies of the Downtown Plan, an element of the San Francisco General Plan, off-street parking is not required for commercial uses in the C-3 District.

By 2015, there could be a commercial parking shortfall of about 4,750 spaces in the Transbay Study Area, bounded by Market, Spear, Bryant, and Third Streets, and the project's unmet demand (80 spaces) would contribute to that cumulative shortfall. As stated previously, an unmet parking demand would not itself be considered a significant effect in the context of General Plan policies that emphasize public transit use and discourage automobile use. This cumulative parking deficit would result in drivers parking farther away from their destination or circulating around the area in search of a parking facility with available space, would cause an increase in illegal on-street parking, or would cause drivers to change travel modes. The long-term effect of the cumulative parking deficit could be to discourage auto use and encourage use of local transit; it could also encourage construction of additional parking

facilities or measures to increase the supply within existing and proposed facilities (e.g., through valet parking).

The project would not have a noticeable effect on pedestrian flow conditions on sidewalks and crosswalks in proximity to the project site. The project's effect would be similar to that described in the 1986 FEIR (i.e., conditions would be no worse than "impeded"), indicating that pedestrians generally have freedom to select the speed and direction of movement, with an absence of physical conflicts, but requiring indirect interaction with other pedestrians. As described in the Transbay Redevelopment Area Transportation Study, pedestrian flow conditions at crosswalks in the project area in 2015 generally would be such that there would be sufficient space for pedestrians to select normal walking speeds and to bypass other pedestrians in primarily unidirectional flow streams; where reverse-direction or crossing movements exist, minor conflicts occur, and speeds are somewhat slower.

The project's proposed two truck loading docks accessible from Minna Street, plus two service vehicle loading spaces in the basement would meet the Planning Code requirement for three loading spaces. The provision of loading spaces would meet the project's average demand for two off-street freight loading spaces; peak demand of three spaces would not be met unless deliveries/service calls were made by both trucks and van/UPS-type vehicles. If loading demand by full-size trucks were to exceed two spaces, then on-street double parking would occur on Mission or Minna Street. The conclusion of the 1986 FEIR, which was exactly the same as described above, remains valid.

Concerning construction-related impacts, the project would be built with a duration and level of construction truck and worker activity similar to that described in the 1986 FEIR. That is, there would be between 15 and 25 truck movements per day during the demolition and excavation phases (about five months in duration) and about 5 truck movements per day during the remaining year-and-a-half construction phase. Primary construction truck access to the site would be from Mission Street, with secondary access from Minna Street. During the construction period, the sidewalks fronting the project site on Mission, Shaw and Minna Streets would most likely be closed, and the curb lane on Mission Street would need to be closed, displacing on-street parking and loading spaces, to provide a pedestrian detour. Material storage would occur off-site, which would generate construction vehicle trips to the site. Parking of construction workers' vehicles would temporarily increase occupancy levels in off-street parking facilities, either by those vehicles or by vehicles currently parking in on-street spaces that would be displaced by construction workers' vehicles. Temporary and intermittent traffic and transit impacts would occur during the construction period because of slower movements and larger turning radii of construction vehicles compared to passenger vehicles. The effects of construction traffic on surrounding traffic and transit would be mitigated by measures proposed as part of the project.

D. AIR QUALITY

SETTING

The 1986 FEIR described the air quality setting with reference to state and national ambient air quality standards, “attainment” and “non-attainment” designations for those standards, local concentration monitoring data, principal emissions sources, and a regional air quality plan intended to address “non-attainment” pollutants. An updated discussion of each of these issues is provided below.

U.S. Environmental Protection Agency (EPA) and the State Air Resources Board (ARB) have established ambient air quality standards to protect public health and welfare. EPA standards are referred to as national ambient air quality standards (national standards) and ARB standards are referred to as state standards. EPA and ARB periodically review and revise these standards in light of new research results. Since 1986, some standards have been revised, and new standards have been established. In 1997, the U.S. Environmental Protection Agency (EPA) began the process of replacing the national one-hour-average ozone standard with an eight-hour-average standard. Current standards are shown in Table 2, below.

The 1986 FEIR noted that, based on monitoring data, the Bay Area had been designated as a “non-attainment” area by EPA for the national standards for ozone and carbon monoxide. Since then, and in recognition of improving conditions with respect to carbon monoxide, EPA re-designated the Bay Area as an “attainment” area for the national carbon monoxide standard. The Bay Area, however, remains a “non-attainment” area for the national one-hour ozone standard. (Area designations for the new national ozone standard will not be determined until 2000 or later.) In addition, the FEIR noted occasional monitored violations of the state particulate matter standard (then defined in terms of “total suspended particulate” or TSP). Since then, the Bay Area has been designated by ARB as a “non-attainment” area for the state standard for particulate matter (now defined in terms of PM-10). ARB has also designated the Bay Area as a “non-attainment” area for the state ozone standard.

The 1986 FEIR discussed local air quality conditions using data from a series of “hot spot” locations as well as from the main San Francisco monitoring station (then on 23rd Street). The monitoring data presented in the 1986 FEIR indicated that violations of state and national carbon monoxide standards, as well as state standards for ozone and particulate matter, occurred on occasion in San Francisco. Since then, the remaining “hot spot” monitoring location lies along Ellis Street within the Van Ness Avenue corridor, and the main San Francisco monitoring station has been relocated to Arkansas Street.

Table 3 provides a summary of recent air pollutant monitoring data collected at the Arkansas Street station. While violations of carbon monoxide and ozone standards have not been measured over the past several years in San Francisco, PM-10 concentrations continue to violate state standards. Over the past four years, approximately 5 percent of the 24-hour PM-10 samples have violated the 24-hour state standard.

The 1986 FEIR noted that San Francisco’s air quality problems, primarily carbon monoxide and particulate matter, were due largely to pollutant emissions from within the City and also noted that

TABLE 2
STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	National ^{b,c}	State of California ^{a,c}
Ozone ^d	1 hour	0.12 ppm (235 µg/m ³)	0.09 ppm (180 µg/m ³)
	8 hour	0.08 ppm (160 µg/m ³)	NA
Carbon Monoxide	1 hour	35 ppm (40,000 µg/m ³)	20 ppm (23,000 µg/m ³)
	8 hour	9 ppm (10,000 µg/m ³)	9.0 ppm (10,000 µg/m ³)
Nitrogen Dioxide	1 hour	NA	0.25 ppm (470 µg/m ³)
	Annual	0.053 ppm (100 µg/m ³)	NA
Sulfur Dioxide	1 hour	NA	0.25 ppm (655 µg/m ³)
	3 hour	0.5 ppm (1,300 µg/m ³)	NA
	24 hour	0.14 ppm (365 µg/m ³)	0.04 ppm (105 µg/m ³)
	Annual	0.03 ppm (80 µg/m ³)	NA
Particulate Matter (PM-10)	24 hour	150 µg/m ³	50 µg/m ³
	Annual	50 µg/m ³	30 µg/m ³
Sulfates	24 hour	NA	25 µg/m ³
Lead	30 day	NA	1.5 µg/m ³
	Calendar Quarter	1.5 µg/m ³	NA
Hydrogen Sulfide	1 hour	NA	0.03 ppm (42 µg/m ³)
Vinyl Chloride	24 hour	NA	0.010 ppm (26 µg/m ³)

^a California standards for ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, particulate matter (PM-10) are values that are not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

^b National standards, other than for ozone and particulate matter and those based on annual averages, are not to be exceeded more than once per year. For the one-hour ozone standard, the ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The eight-hour ozone standard is met at a monitoring site when the three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration is less than or equal to 0.08 ppm.

^c ppm = parts per million by volume; µg/m³ = micrograms per cubic meter.

^d New standards effective September 16, 1997 (40 CFR 50.7 and 40 CFR 50.10).

NA: Not Applicable.

SOURCE: California Environmental Protection Agency, Air Resources Board, *Maps and Tables of the Area Designations for the State and National Ambient Air Quality Standards and Expected Peak Day Concentrations and Designation Values*, January 1998.

TABLE 3
SAN FRANCISCO CRITERIA AIR POLLUTANT CONCENTRATIONS, 1994-1998

Pollutant	State Standard ^c	Monitoring Data by Year ^a				
		1994	1995	1996	1997	1998
<u>Ozone:</u>						
Highest 1-hour average, ppm ^b	0.09	0.06	0.09	0.07	0.07	0.05
Number of exceedences ^d		0	0	0	0	0
<u>Carbon Monoxide:</u>						
Highest 1-hour average, ppm	20	6	5	5	5	ND
Number of exceedences		0	0	0	0	
Highest 8-hour average, ppm	9.0	4.5	4.4	3.9	3.5	ND
Number of exceedences		0	0	0	0	
<u>Nitrogen Dioxide:</u>						
Highest 1-hour average, ppm	0.25	0.09	0.09	0.08	0.07	ND
Number of exceedences		0	0	0	0	
<u>Sulfur Dioxide:</u>						
Highest 1-hour average, ppm	0.25	0.02	0.04	0.04	0.03	ND
Number of exceedences		0	0	0	0	
<u>Particulate Matter (PM-10):</u>						
Highest 24-hour average, µg/m ³ ^b	50	93	50	71	81	ND
Exceedences/Samples ^e		6/61	0/61	2/61	3/61	
Annual Geometric Mean, µg/m ³	30	24.7	22.1	21.4	22.5	
<u>Lead (Pb):</u>						
Highest monthly average, µg/m ³ ^b	1.5	0.03	0.02	0.01	0.01	ND
Number of Exceedences ^e		0	0	0	0	

^a Data for all pollutants are from the Arkansas Street air quality monitoring station in San Francisco, which is located approximately 1.6 miles south of the project site.

^b ppm = parts per million; µg/m³ = micrograms per cubic meter.

^c State standard, not to be exceeded.

^d Except for ozone, "number of exceedences" refers to the number of measured violations in a given year of the applicable standard. For ozone, "number of exceedences" refers to the number of days in a given year during which at least one hour exceeded the standard.

^e PM-10 and Pb is usually measured every sixth day (rather than continuously like the other pollutants). For PM-10, "exceedences/samples" indicates the number of exceedences of the state standard that occurred in a given year and the total number of samples that were taken that year.

NOTE: ND = No data available. Values shown in **bold** type exceed the applicable standard.

SOURCE: California Environmental Protection Agency, Air Resources Board, *California Air Quality Data*, 1994, 1995, 1996, 1997; www.arb.ca.gov.

San Francisco emissions contributed to regional air quality problems, primarily ozone. The same is true today, although the relative contributions from the major source categories (e.g., traffic, power plants, etc.) to local and regional air quality problems have changed somewhat. More recent inventories indicate that, within San Francisco County, transportation-related emissions sources account for approximately 60 percent of the County's carbon monoxide emissions and 80 percent of the County's PM-10 emissions (Bay Area Air Quality Management District, 1996). With respect to regional issues, on-road motor vehicles account for approximately 40 percent of the region's reactive organic gases (ROG) emissions and 50 percent of the region's nitrogen oxides (NO_x) emissions (Bay Area Air Quality Management District, 1997). ROG and NO_x are precursors to ozone and PM-10. PM-10 concentrations reflect both direct sources of that pollutant plus secondary sources (i.e., those that generate ROG, NO_x, or sulfur oxides). Regionally, there is a downward trend in carbon monoxide and ozone precursors but an upward trend in direct PM-10 emissions (Bay Area Air Quality Management District, 1996).

The 1986 FEIR indicates that three regional planning agencies, the Association of Bay Area Governments (ABAG), the Bay Area Air Quality Management District (BAAQMD), and the Metropolitan Transportation Commission, prepared an air quality plan, the *1982 Bay Area Air Quality Plan*, to address the region's "non-attainment" designation for national ozone and carbon monoxide standards. Since then, these agencies have developed a "maintenance" plan to address the Bay Area's re-designation to "attainment" for the national carbon monoxide standard, and are currently preparing a revised attainment plan to address the Bay Area's re-designation back to "non-attainment" for the national ozone standard.

In addition, in 1988, a parallel air quality planning process was established under the State California Clean Air Act whereby areas designated as "non-attainment" for the state standards (not including PM-10) were required to develop air quality plans to achieve those standards. Pursuant to the California Clean Air Act, the BAAQMD prepared a regional air quality plan to address the "non-attainment" status of the Bay Area with respect to the state standards for ozone and carbon monoxide. The Clean Air Plan is updated on a triennial basis and has been updated twice since the original plan was adopted in 1991. Since the original 1991 Clean Air Plan was adopted, the Bay Area has been re-designated as "attainment" for the state ambient carbon monoxide standard, and as a result, Clean Air Plan updates focus on the achieving the state ozone standard. The current plan is the *'97 Clean Air Plan* (Bay Area Air Quality Management District, 1997). Like its two predecessors, the *'97 Clean Air Plan* calls for local planning agencies to take a more active role in improving regional air quality by encouraging in-fill development and higher density development near transit hubs.

IMPACTS

The air quality impact analysis of the 1986 FEIR revised the corresponding analysis and conclusions of the Downtown Plan EIR to reflect the implementation of the (motor vehicle) Inspection and Maintenance (I/M) program that went into effect after the Downtown Plan EIR was prepared. Using revised emissions factors reflecting the I/M program, the 1986 FEIR concluded that cumulative development, including the project, would not have a significant effect on local carbon monoxide concentrations and that potential violations of carbon monoxide standards would be eliminated prior to 2000. With respect to emissions impacts, the 1986 FEIR concluded that the project would contribute approximately one percent to total

emissions generated under the Downtown Plan, and that emissions of particulate matter from construction and vehicle tips generated by the project and cumulative development would increase particulate matter concentrations, which could increase the frequency of particulate matter standard violations in San Francisco, with concomitant health effects and reduced visibility. The 1986 FEIR identified mitigation measures to reduce the project's incremental contribution to this cumulative effect but concluded that the residual cumulative impact would be significant and unavoidable. Lastly, the 1986 FEIR reaffirmed the conclusion of the Downtown Plan EIR that cumulative development, including the project, would not conflict with the objectives of the *1982 Bay Area Air Quality Plan*.

The current project differs little from the project that was analyzed in the 1986 FEIR; therefore, the following impact discussion focuses on changes in circumstances from which different conclusions regarding project and cumulative air quality effects could arise.

Since publication of the FEIR, State and federal agencies have mandated a reformulation of gasoline such that the fuel burns more cleanly than before (i.e., produces less carbon monoxide). Thus, while traffic volumes on certain streets in the project vicinity may be higher than was predicted in the 1986 FEIR, carbon monoxide concentrations are expected to decrease over time. Thus, the conclusion that the cumulative impact of Downtown development on local carbon monoxide concentrations would be less than significant remains the same despite increased traffic volumes on some streets (and decreases on others). This conclusion is supported by the fact that even the highest measured carbon monoxide concentrations in the heavily-traveled Van Ness corridor have not approached the standard over the past five years. In addition, BAAQMD emissions inventories predict a 20 percent decrease in carbon monoxide emissions within San Francisco County between 2000 and 2010 (Bay Area Air Quality Management District, 1996).

The BAAQMD has published *BAAQMD CEQA Guidelines* (Bay Area Air Quality Management District, 1996) that contain recommendations for lead agencies in evaluating the air quality impacts of projects under CEQA. *BAAQMD CEQA Guidelines* recommend that a project-specific emissions threshold of 80 pounds per day be used to identify significant (operational-phase) emissions of reactive organic gases (ROG), nitrogen oxides (NO_x), or PM-10. Table 4 presents operational-phase emissions estimates for the project and compares them with the corresponding estimates included in the 1986 FEIR and with the BAAQMD-recommended significance thresholds. Emissions estimated for the project are somewhat higher than those presented for the project in the 1986 FEIR due to changes in calculation methods and emissions factors.

Nonetheless, as shown in Table 4, project emissions would not exceed the BAAQMD-recommended significance threshold of 80 pounds per day for ROG, NO_x , or PM-10. Thus, the project-specific impact on emissions would be less than significant. Although the project would result in CO emissions well below the BAAQMD analysis threshold of 550 lbs/day, microscale modeling of CO was conducted because two of the three project study intersections (First/Mission and First/Harrison) would operate at LOS E or F. The modeling revealed that at both intersections the project would result in CO emission levels below the state and federal one-hour and eight-hour local concentration standards under existing

TABLE 4
PROJECTED DAILY TRANSPORTATION-RELATED POLLUTANT EMISSIONS

Pollutant	Emissions (pounds per day) ^a		BAAQMD Criterion (pounds per day)
	1986 FEIR	1998 project	
Reactive Organic Gases	10	19	80
Nitrogen Oxides	12	21	80
Sulfur Dioxide	2	1	n/a
Particulate Matter (PM-10)	22	17	80

^a Project emissions are based on BAAQMD methodology shown in its *Guidelines* document (April 1996), an average vehicle trip generation rate of 826 per day, an average trip length of 11.4 miles (approximately 9,450 vehicle-miles traveled), and an average vehicle speed of 20 miles per hour. Year 2000 emissions factors were used. PM-10 emissions include entrained road dust (0.69 gram/mile) in addition to tire wear and exhaust emissions. Emissions estimates from the 1986 FEIR were based on approximately 10,560 vehicle-miles traveled (FEIR Table 9, p. 115).

n/a = not applicable

SOURCE: Environmental Science Associates, 1998.

plus project, interim cumulative (2005), and long-range cumulative (2015) conditions.¹¹ These conclusions are in contrast to the 1986 FEIR analysis, which found exceedances of the 8-hour standards at two intersections (First/Mission and Beale/Mission) and no exceedances under long-range cumulative conditions (2000). The *BAAQMD CEQA Guidelines* suggest a different approach for evaluating the cumulative impacts of projects than was used for the 1986 FEIR. To assess the significance of the cumulative effect of projects that, in themselves, would contribute less than 80 pounds per day of ROG, NO_x, or PM-10, the BAAQMD recommends that the analysis determine whether the applicable general plan is consistent with the regional air quality plan (i.e., the *'97 Clean Air Plan*) and, if so, whether the project is consistent with that general plan.

To be consistent with the *'97 Clean Air Plan*, a general plan should: 1) be based on population projections that are consistent with those used for the *'97 Clean Air Plan*; 2) accommodate a rate of increase in vehicle miles traveled (VMT) that is less than or equal to the rate of increase in population; and 3) implement the applicable transportation control measures (TCMs) identified for local governments in the *'97 Clean Air Plan*. Each of these points is discussed below.

- The *San Francisco General Plan* does not include population growth projections that can be compared directly with population projections made by the ABAG and used by the BAAQMD in

¹¹ At both of the intersections analyzed (First/Mission and First/Harrison), one-hour concentrations would not exceed 11.3 ppm and eight-hour concentrations would not exceed 7.7 ppm.

developing the '97 *Clean Air Plan*. However, the Residence Element of the *San Francisco General Plan* recognizes the need to develop new housing to address the City's current and projected future jobs/housing imbalance. Related housing policies will lead to an increase in population in the City, which will help align population in San Francisco with ABAG's forecasts.

- To determine the rate of increase in vehicle-miles-traveled (VMT), growth factors that are shown in the BAAQMD's '97 *Clean Air Plan* for San Francisco County were applied to VMT estimates by vehicle type (e.g., passenger auto-catalyst, non-catalyst, etc.) in San Francisco County for year 1990. (The vehicle-type-specific VMT estimates are based on the latest information on vehicular activity in San Francisco County from the ARB.) Based on this method, which applies BAAQMD county-specific growth factors to ARB county-specific motor vehicle activity data, the percentage increase in VMT from 1990 to 2003 in San Francisco County will be approximately seven percent. The percentage increase in population in San Francisco County during that same period will be approximately eight percent based on ABAG population forecasts used in the '97 *Clean Air Plan* (Association of Bay Area Governments, 1995). Therefore, the rate of increase in VMT will be less than the rate of increase in population.
- The TCMs that are to be implemented under the '97 *Clean Air Plan* by local governments include assistance to regional and local ridesharing organizations, improvement of bicycle access and facilities, improvement in arterial traffic management, expansion of transit use incentives, and incorporation of air quality policies in the general plan. The City and County of San Francisco implements all of the above TCMs in one form or another and implements others as well. For example, the *San Francisco General Plan* articulates a "Transit First" policy objective directed towards establishing public transit as the primary mode of transportation within the City. The City also operates a Bicycle Program and has adopted a Bicycle Plan that provides the framework for providing the facilities to make bicycle use a more attractive alternative mode of transportation in the City.

The project itself would not require a general plan amendment and, the San Francisco General Plan is, as described above, consistent with the '97 *Clean Air Plan*. Therefore, using the BAAQMD approach, the cumulative air quality impacts would add would not be significant.

REFERENCES

Association of Bay Area Governments, *Projections 96*, December 1995.

Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines*, April 1996.

Bay Area Air Quality Management District, '97 *Clean Air Plan*, December 1997.

City and County of San Francisco, Department of City Planning, *535 Mission Street, Final Environmental Impact Report*, November 1986.

E. SHADOW

SETTING

Shadow cast on streets and sidewalks near the project site is similar to that described in the Shadow and Wind section of the 1986 FEIR. Two primary changes have occurred since that document was prepared: the demolition of one of the buildings on the project site and construction of nearby buildings. In addition, there are proposals for several other buildings in the area, some of which have been approved by the Planning Commission, that, if constructed, would contribute to the shadow cast in the project vicinity.

In general, open space in the project vicinity is typically in the form of publicly accessible, privately owned open space, including the plazas at the base of high-rise office towers at 525 and 555-575 Market Street; the Fremont Center Plaza (between First and Fremont and Market and Mission Streets); the 100 First Street rooftop “sun terrace” above the parking garage adjacent to the project site to the east; and a plaza behind 71 Stevenson Street, to the northwest of the project site. There is also an area of open space at the entrance to Golden Gate University, directly across Mission Street from the project site. There are no public parks or open spaces in the immediate project vicinity. The nearest public open spaces are Union Square, at Stockton and Geary Streets; St. Mary’s Square, at Pine Street and Grant Avenue; Justin Herman Plaza, at Market Street and The Embarcadero; and Yerba Buena Gardens, a San Francisco Redevelopment Agency property, at Third and Mission Streets.

IMPACTS

Section 295 of the City Planning Code restricts new shadow on public open spaces under the jurisdiction of the Recreation and Park Department by any structure exceeding 40 feet unless the City Planning Commission finds the impacts to be insignificant. In San Francisco, a project would generally be considered to have no significant shadow impact if it was in conformance with Section 295 of the City Planning Code (often referred to as the Sunlight Ordinance or “Prop K”).

A discussion of shadow effects of the originally proposed project was presented on pp. 83-92 of the 1986 FEIR. As stated on p. 89, the project would not add any shadow to open spaces under Recreation and Park Department jurisdiction during any of the Prop K hours, which are between one hour after sunrise and one hour before sunset. New shadow testing performed for the current building design verifies that this analysis remains valid, and that the project would not result in significant shadow impacts. Some increased effects would occur, however, and these non-significant effects are described below.

As noted in the 1986 FEIR, the original project would add new shadow on nearby streets, sidewalks, and buildings, as well as on publicly accessible, private open spaces (not subject to Section 295) in the project vicinity. The nearest and largest of these spaces is the 100 First Street sun terrace, which is located above a two-story parking garage on Mission Street, immediately adjacent to the project site on the east. Because of its location relative to the sun terrace, the original project would add new shadow to the sun terrace at various times throughout the year, and especially in the afternoon. This is depicted on pp. 84-87 and 194-201 of the FEIR. These diagrams show that by 2:00 p.m. year-round, the original

project would cast shadow on most of the sun terrace. (The sun terrace is currently partially shaded by the existing three-story 531 Mission Street building on the project site, but is mostly in sunlight during the noon hour [12-1 p.m.] except in late fall and early winter.)

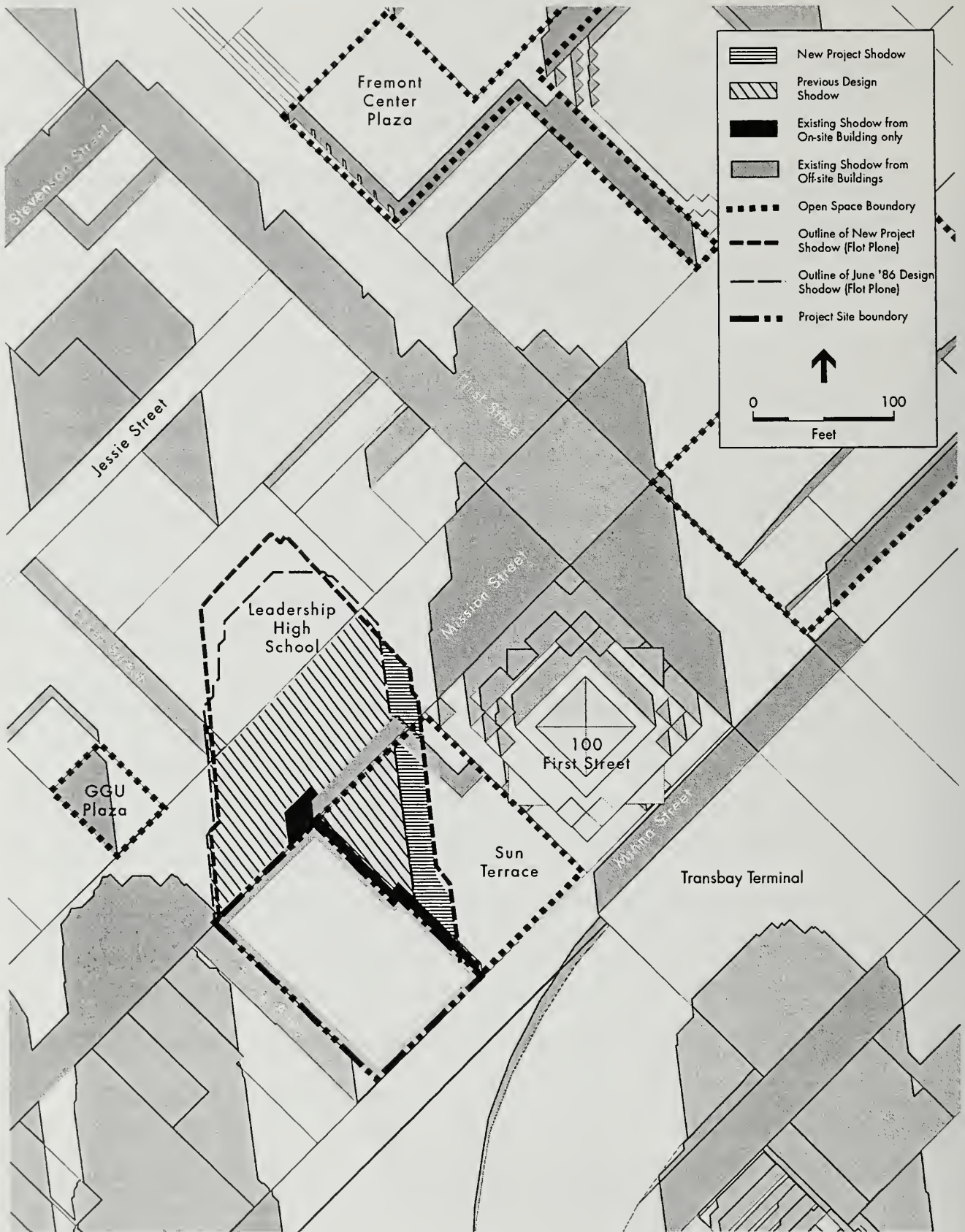
Shadow from the project as currently proposed would be more extensive on the sun terrace than that depicted in the FEIR, since the current project design does not propose the original project's diagonal cut at the building's southeastern corner (see Figures 15 and 16). Therefore, for example, at 12:00 noon on December 21 (see FEIR Figure 23, p. 84), current project shadow would cover all but the southeastern corner of the sun terrace, although the net increase would not be nearly as great since portions of the sun terrace are already in shadow at this time as a result of the existing building on the project site. At noon on December 21, for example, about two-thirds of the sun terrace would be in shade compared to about one-quarter under existing conditions. On March 21 at noon (see FEIR Figure 24, p.85), when the sun terrace is mostly in sunlight, project shadow would cover about half of the sun terrace, leaving the southeastern half in sunlight. A similar pattern would prevail in September, except that shadow patterns would occur one hour later due to daylight savings time, and the sun terrace would therefore be mostly in sunlight at noon, and about three-fourths shaded by 2:00 p.m. During these March and September hours, the existing shadow on the sun terrace would be less than at noon on December 21. On the summer solstice, June 21, at noon, the sun terrace would remain mostly in sunlight through the noon hour.

In addition to shadow from the proposed 535 Mission Street project, the 100 First Street sun terrace would be partially shaded in the mid- to late morning hours in the fall months by 524 Howard Street (another office project proposed southeast of the sun terrace), and during the winter months by The Century (a residential project under construction to the southwest of the project site). Shadow from the two projects would not overlap, and so would cumulatively increase the duration of shading of the sun terrace. The 524 Howard Street project would shade about 1,500 sq. ft. (at September 21, 11 a.m.) of the sun terrace and The Century would shade about 3,500 sq. ft. (at June 21, 11 a.m.) of the terrace.

As described in the 1986 FEIR, other publicly accessible private open spaces (not subject to Section 295) that would be shaded by the proposed project include the Golden Gate University entry plaza and sixth-floor seating area, immediately across Mission Street, and, for brief periods, the plaza adjacent to 525 Market Street. Like the original project, the current project would not add new shadow to the Fremont Center Plaza on First Street between Market and Mission Streets. Also newly shaded by the project would be Leadership High School, across Mission Street from the sun terrace. (This school was built in 1998 and is a series of portable building on what was an undeveloped parcel in 1986.)

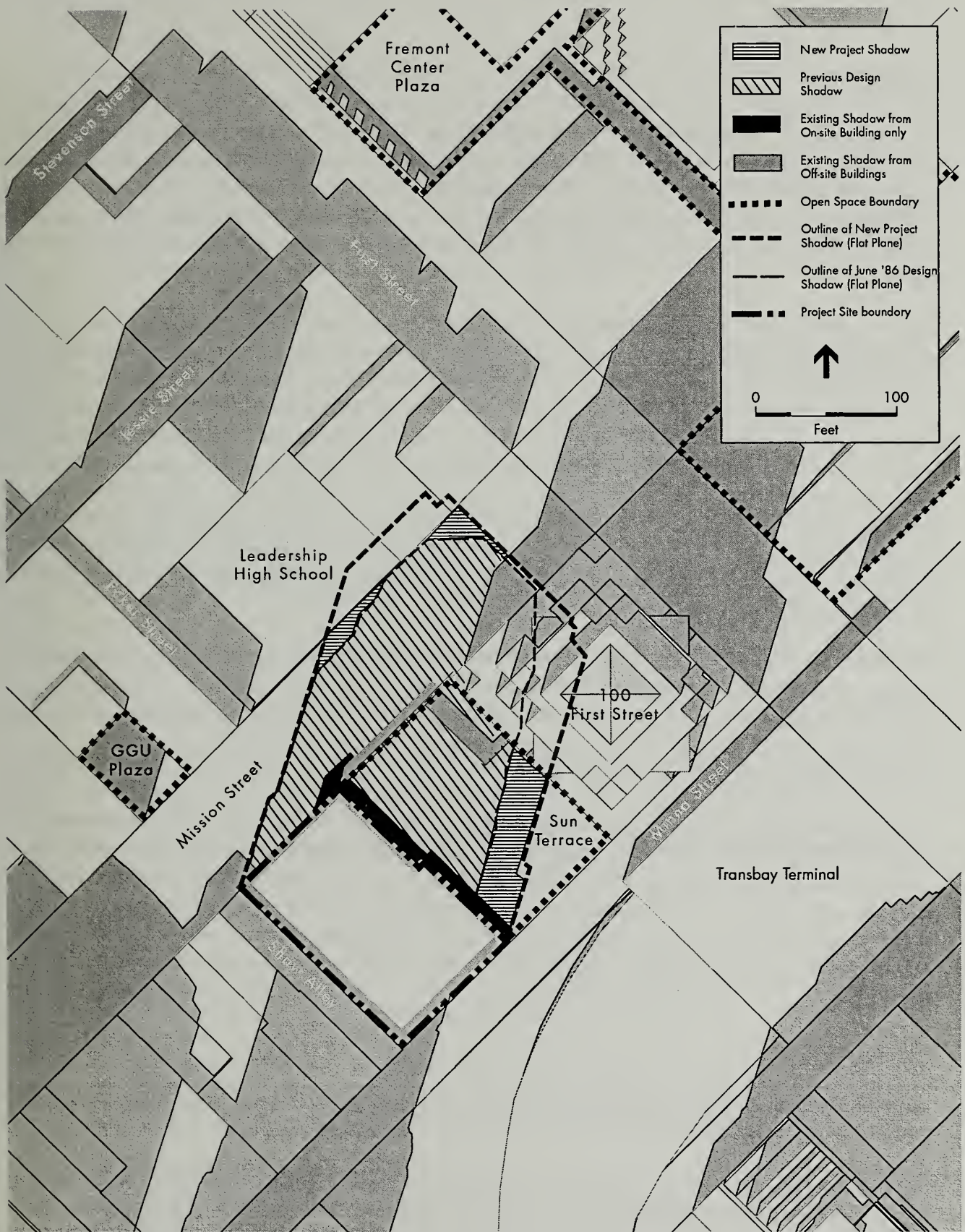
The project's proposed open space on Shaw Alley would be mostly shaded by existing buildings and by the project, although it would receive sunlight during the summer in early afternoon hours and during fall morning hours. The project would only result in a net increase of shade on Shaw Alley during the summer late morning hours.

In general, with the exception of the additional shadow on the 100 First Street sun terrace, shadow effects would be as described in the 1986 FEIR. Also, the conclusion of that EIR, that no significant shadow impact would occur, remains valid.



SOURCE: Environmental Science Associates

Figure 15
March 21, 12 noon
Comparative Shadow Diagram



SOURCE: Environmental Science Associates

535 Mission Street / 980392 ■

Figure 16

March 21, 1 pm

Comparative Shadow Diagram

F. WIND

To update information analysis contained in the 1986 FEIR, wind-tunnel tests were conducted for each of three test scenarios: existing setting, setting plus the proposed project, and cumulative conditions plus the proposed project. Thirty-six test locations were studied for each of these scenarios for the four prevailing wind directions: northwest, west-northwest, west, and southwest.¹² These winds are the most common in San Francisco, and are therefore the most representative for evaluation of the proposed project.

In general, the test locations focused on sidewalks of Mission and Minna Streets, and nearby open spaces. Four test points were placed on the 100 First Street sun terrace, adjacent to the project site, and one at the entrance to Golden Gate University. One location was placed on Shaw Alley, at Minna Street. Just downwind from the site, two test locations were placed in the open parking area between Minna and Natoma Streets and one location placed on Natoma Street, east of the Transbay Terminal access ramp. Along Mission Street were nineteen locations, with nine on the north side of Mission and ten on the south side. Nine points were located on Minna Street, between First and Second Streets. (Note that these groupings, as well as others used in the discussions of existing conditions and project conditions, may include some individual locations in more than one group for discussion purposes.) To the extent possible, all measurements were taken at the same series of surface points around the project site for all test configurations and wind directions.

For the purpose of identifying the applicable wind comfort criterion, five of the 36 existing test locations represent existing outdoor seating locations. All other test locations are considered to be pedestrian, rather than sitting, areas. Although portions of the project open space are proposed to be used for an outdoor cafe, the seating would not be permanent seating and is not regarded as falling under the Planning Code's seating-comfort criterion.

The wind-tunnel testing results are not directly comparable to those reported in the 1986 FEIR because there has been a revision to the methodology by which the raw data from the wind tunnel are analyzed to compute ground-level wind speeds. This change to the City's standard methodology was made to more accurately reflect the contribution of west-southwest winds to overall wind speeds and has generally resulted in an increase in the reported wind speeds since the 1986 FEIR was published. For a more detailed explanation of the standards and protocol that were used for the wind tunnel tests, see Appendix B.

SETTING

Reader: The following site specific information supplements the general city-wide wind setting described in the 1986 FEIR.

City Planning Code Section 148, Reduction of Ground-Level Wind Currents in C-3 (Downtown Commercial) Districts, requires buildings to be shaped so as not to cause ground-level wind currents to

¹² The 1986 FEIR analysis was based on wind tunnel measurements made at 24 locations, some of which may be the same locations measured in the wind tunnel analysis conducted for the proposed project and discussed herein.

exceed, more than 10 percent of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the Code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph as averaged for a single full hour of the year, or 0.011416% of the time. The comfort criteria are based on wind speeds that are measured for one minute and averaged. In contrast, the hazard criterion is based on winds that are measured for one hour and averaged; when stated on the same basis as the comfort criteria winds, the hazard criterion speed is a one-minute average of 36 mph. The wind ordinance is defined in terms of equivalent wind speed,¹³ which is an average wind speed (mean velocity) adjusted to include the level of gustiness and turbulence.

The existing wind setting consists of all existing buildings together with approved, but unbuilt or uncompleted buildings in the vicinity of the site. Approved, but unbuilt or uncompleted buildings include the 524 Howard Street building at Howard and First Streets, 199 Fremont Street building at Howard and Beale Streets, 101 Second Street building (under construction) at the corner of Second and Mission Streets and The Century (Natoma Mews) building across Minna Street from 101 Second Street. Additional buildings are included further upwind in the Yerba Buena Redevelopment Area.¹⁴

The existing wind conditions in the vicinity of the site range from sheltered to moderately windy; the average wind speed is 9 mph. Wind speeds in pedestrian areas range from 5 mph to 15 mph. In general, the highest ground-level wind speeds in the vicinity of the site occur along Minna Street, west of Shaw Alley, where wind speeds of 15 mph exist at two locations and on the south side of Mission Street, west of Shaw Alley, where wind speeds of 14 mph exist at two locations. The wind speeds at nine of the 36 measured existing locations exceed the Planning Code's pedestrian-comfort criterion value of 11-mph. This data differs from that provided in the 1986 FEIR, which found, using slightly different methodology, that there were no existing exceedances of the comfort criteria.

Wind speeds of 2 mph to 6 mph exist at five seating area locations in the nearby public open spaces of 100 First Street sun terrace and the entrance to Golden Gate University. All five locations meet the 7 mph seating-comfort criterion of the Planning Code. The Code's wind hazard criterion of 36 mph is now exceeded at two locations on Minna Street, west of Shaw Alley. The duration of the exceedances is between one and two hours per year.

IMPACTS

A project is considered to have a significant effect on the environment with regards to wind if the project would result in any new exceedances of the hazard criterion speed of 36 mph.

As a result of the proposed project, wind conditions in the project vicinity would remain sheltered to moderately windy. Compared to existing conditions, the average wind speed would decrease, by less than 1/2 mph, to just under 9 mph. The project would reduce existing wind speeds at 19 of the 36

¹³ The term wind speed refers here to equivalent wind speed (including the effects of turbulence) that are exceeded a specified percentage of time: 10% of the time for pedestrian comfort comparisons and one hour per year for wind hazard comparisons.

¹⁴ Other approved or under construction buildings in the area were not included in the existing setting, for the following reasons: the One Second Street building (approved) is not expected to be built in the near future; and, the 246 Second Street Condominium highrise is too far south to affect the wind conditions of the site.

locations and increase existing wind speeds at 9 locations. Existing wind speeds would remain unchanged at 8 locations.

Wind speeds in pedestrian areas would range from 5 mph to 14 mph, a slightly smaller range than under existing conditions. The highest wind speeds in the vicinity (13 mph and 14 mph) would occur on Minna Street, west of Shaw Alley, while wind speeds of 12 mph would occur on the south side of Mission Street, west of the project site, and at other points on Minna Street west of the project site. Wind speeds at all but one of these locations would be slightly less than under existing conditions.

With construction of the project, a total of six existing exceedances of the pedestrian-comfort criterion would continue to occur. The project would add no new exceedances and would eliminate three of the nine existing exceedances. Wind speeds would increase at three of the five existing open space locations.¹⁵ Wind speeds at one location on the 100 First Street sun terrace would exceed the seating-comfort criterion value of 7 mph; this would be a new exceedance. (This would be in contrast to the original 1986 project that would have resulted in wind increases at 15 locations, but would not have exceeded any comfort criteria. As noted, the testing methodology has changed since 1986, and so the results are not directly comparable.)

On Minna Street, wind speeds would increase by as much as 4 mph adjacent to the project, and remain unchanged or decrease by as much as 2 mph at other locations. On Mission Street wind speeds would increase by as much as 2 mph on the north and south sides of Mission Street, east of Shaw Alley, and decrease by as much as 3 mph west of Shaw Alley.

The wind hazard criterion is currently exceeded at two locations on Minna Street, west of Shaw Alley. With the project, wind speeds at both locations would decrease, eliminating the exceedance at one location but maintaining it at the second location. No new exceedances would occur. The Transbay Area in which the project site is located is experiencing a period of rapid development, with many new projects either currently under construction or proposed for development, including sites on the same block as the project site. As future infill development occurs, wind conditions in the vicinity will continue to change and may very likely result in a steady decrease in area wind speeds. Under cumulative conditions, the project was assessed in a setting that was assumed to include all reasonably foreseeable future high-rises (including 554 Mission, One Second Street, and two proposed buildings in the Yerba Buena Center area).¹⁶

Under cumulative conditions, wind conditions would remain sheltered to moderately windy; the average wind speed would decrease by less than 1/2 mph, compared to project conditions, to just over 8 mph or more than 1/2 mph less than under existing conditions. Cumulative conditions would reduce project wind speeds at 19 of the 36 locations and increase project wind speeds at 2 locations. Project wind speeds would remain unchanged at 15 locations.

¹⁵ Although portions of the project open space are proposed to be used for an outdoor cafe, the seating would not be permanent seating and is not regarded as falling under the seating-comfort criterion of the Planning Code.

¹⁶ The pending Bloomingdale's building is too far west to affect the wind conditions of the site and therefore was not included.

On Minna Street, wind speeds would decrease, compared to project conditions, by as much as 2 mph adjacent to the project, and remain unchanged or decrease by as much as 1 mph at other locations. On both sides of Mission Street east of Shaw Alley, wind speeds would increase by as much as 1 mph. On the south side of Mission Street, west of Shaw Alley, wind speeds would generally not change or increase by as much as 2 mph. At the nine points on Minna Street, between First and Second Streets, wind speeds would range from 5 mph to 13 mph, with the higher speeds continuing to occur only west of Shaw Alley. At the one location on Shaw Alley, wind speed would decrease by 2 mph, to become 10 mph.

Cumulative development would eliminate four of the existing exceedances of the pedestrian-comfort criterion, and would leave five of the existing exceedances remaining, for a total of five pedestrian-comfort exceedances. Wind speeds would decrease at all of the five open space locations by 1 mph to 2 mph. The one project exceedance of the seating-comfort criterion in the 100 First Street sun terrace would be eliminated. Cumulative development would not cause a new wind hazard exceedance and would eliminate the one existing wind hazard exceedance that would continue to occur under project conditions by reducing wind speeds by 14 mph at that location.

In conclusion, under project conditions wind speeds would be reduced at 19 locations, increase at nine locations, and remain unchanged at eight locations. The project would add no new pedestrian-comfort criterion exceedances and would eliminate three of the nine existing exceedances. One new exceedance of the seating-comfort criterion would occur under project conditions, but would be eliminated under cumulative conditions. One of the two existing exceedances of the wind hazard criterion would be eliminated under project conditions and the second would be eliminated under cumulative conditions. The proposed project would not result in new wind hazard exceedances and, as such, would not result in significant wind impacts.

G. OTHER ISSUES

As mentioned in the Introduction to this document, there are a number of topics that were addressed in the 1986 FEIR and its corresponding Initial Study for which no new additional analysis is required as a result of changes in the proposed project, changes in circumstances, or new information. Each of those topics is briefly addressed below, with those that were in the 1986 FEIR listed first, followed by those that were only addressed in the Initial Study.

TOPICS IN 1986 FEIR

I. CULTURAL RESOURCES

A. Historic Architectural Resources

The project site is not located within a conservation district listed in Article 11 of the Planning Code, Preservation of Buildings of Architectural Historical, and Aesthetic Importance in the C-3 (Downtown zoning) Districts. Since publication of the 1986 FEIR, one of the two then-existing buildings on the project site was heavily damaged in a fire and subsequently demolished. This demolished building had been rated a C, of Contextual Importance, by the Foundation for San Francisco's Architectural Heritage. The remaining building on the site, at 531 Mission Street, is not listed in Article 11, and was not rated either in the 1976 Planning Department architectural survey or the Heritage downtown surveys. This building does not meet the definition of an historical resource under CEQA, and would be demolished as part of the project. No significant impact on historic architectural resources would occur, and no further analysis of historic architectural resources is required.

See the Urban Design setting section of the 1986 FEIR (pp. 41-42) for additional information regarding historic architectural resources in the vicinity of the project site.

B. Archaeological Resources

Pages 48-49 and 93-94 of the 1986 FEIR describe the expected archaeological resources that would be expected to be found on the project site. As noted on page 93, a "Cultural Resources Evaluation of Five South of Market Parcels" was conducted and is on file with the Major Environmental Analysis office of the Planning Department, 1660 Mission Street. The report suggests that significant cultural resources dating from the Gold Rush (1849-1857) are likely present on the project site and that artifacts from later periods in the city's development would also be expected to be encountered during construction on the project site. The report recommended incorporation of mitigation measures to eliminate potential impacts to archaeological resources. These measures have been included as part of the project (see Chapter IV, Mitigation Measures) and no further analysis of archaeological resources is required.

II. NOISE

As noted in the 1986 FEIR, the proposed project would result in temporary noise impacts as a result of project construction. As listed in the Mitigations chapter of the 1986 FEIR (pp. 133-134), the project sponsor would implement measures that would mitigate potential significant effects as a result of project

construction, particularly pile driving. The project would not result in noise effects different than those analyzed in the 1986 FEIR. No further analysis of noise effects is required.

III. POPULATION AND EMPLOYMENT

As the project would include essentially the same amount of office space as the project analyzed in the 1986 FEIR, projected employment growth would be similar at about a total of 900 people (beyond the 25 employees currently working on the project site). Area-wide employment growth has been less rapid than assumed in the FEIR, largely because of the recession of the early 1990s. Therefore, project employment would represent a relatively larger percentage of total San Francisco employment growth between 1985 and 2000 (5.1 percent) than would have been the case based on the numbers in the FEIR (1.1 percent). For the period 1985-2015, project employment as a share of the growth in San Francisco employment would be about 0.8 percent. As an office development, the project would be required to participate in the City's Job-Housing Linkage Program. Assuming payment of the allowable in-lieu fee of \$7.05 per square foot, the project sponsor would contribute approximately \$1.7 million to the production of affordable housing. The project would not result in population and employment effects different than those analyzed in the 1986 FEIR and expected increases in project employment, housing demand and indirectly in population growth, would not be considered significant. No further analysis of population and employment is required.

IV. GROWTH INDUCEMENT

Although the project would result in an increase in employment at the project site and in the Downtown, the project would be built in an urban area and no expansion to the infrastructure not already under consideration would be required to accommodate new development and increased employment due to, or induced by, the project. The project would not result in growth inducing effects, as stated in the 1986 FEIR. No further analysis of growth inducement is required.

TOPICS IN INITIAL STUDY (1986 FEIR APPENDIX A)

An Initial Study for the original project analyzed in the 1986 FEIR was prepared and published on March 21, 1986 (Appendix A of the 1986 FEIR). The Initial Study identified a number of issues on pp. A-7 to A-8 as effects found not to be significant, including: Glare, Housing, Operational Noise, Construction Air Quality, Utilities/Public Services, Biology, Geology/Topography, Water, Energy/Natural Resources, and Hazards. The proposed project would similarly not result in significant effects for any of these issues, and no amendments or changes to the Initial Study are warranted.

An updated Phase I Environmental Site Assessment (ESA) was conducted in July, 1998 by PES Environmental, Inc.¹⁷ The ESA found that historic operations at the project site do not appear to present a significant environmental concern, however there is a possibility that volatile organic compound-affected groundwater has migrated under the site. As such, the ESA recommended that a safety plan be prepared for potential worker exposure to volatile organic compound vapors and incidental contact with

¹⁷ PES Environmental, Inc., *Phase I Environmental Site Assessment, 531-539 Mission Street*, July 13, 1998. This report is available for review at the Planning Department, 1660 Mission Street.

potentially-contaminated groundwater. Additionally, if excavation activities require dewatering, water removed from the excavation should be characterized and managed in accordance with all applicable requirements. The specific activities that may be required should be determined based on the actual site conditions and construction activities.

The ESA determined that there are several hazardous materials release sites located within one-mile of the site, however concluded that these sites do not present a significant environmental concern to the project site. Lastly, the ESA concluded that no further investigation is warranted beyond that described in the report.

The proposed project includes demolition of an existing structure on the project site. Demolition of an existing building must comply with State law that requires, where there is asbestos-related work involving 100 square feet or more of asbestos-containing materials, that a contractor be certified and that certain procedures be followed.

Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The Bay Area Air Quality Management District (BAAQMD) is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition. Notification includes the names, addresses and phone numbers of operations and persons responsible, including the contractor; description and location of the structure to be renovated/demolished including size, age and prior use, and the approximate amount of friable asbestos; scheduled starting and completion dates of demolition; nature of planned work and methods to be employed; procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used. The BAAQMD randomly inspects removal operations. In addition, the BAAQMD inspects any removal operations concerning a complaint it has received.

The local office of the California Occupational Safety and Health Administration (Cal-OSHA) must be notified if asbestos abatement is to be carried out. Asbestos abatement contractors must follow State regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos-containing material. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement would occur must have a Hazardous Waste Generator Number assigned by, and registered with, the California Department of Health Services. The contractor and the hauler of the material are required to file a Hazardous Waste Manifest that details the hauling of the material from the site and the disposal of the material. Pursuant to California law, the Department of Building Inspection would not issue the required permit until the applicant has complied with the notice requirements above.

These regulations and procedures, already established as part of the permit review process, would ensure that any potential impacts due to asbestos would be reduced to a level of insignificance. Therefore, no further mitigation is required.

Regarding the potential for lead paint in the existing structure on the site (proposed for demolition as part of the proposed project), demolition and construction activities must comply with Chapter 36 of the San Francisco Building Code, Work Practices for Exterior Lead-Based Paint. Where there is any work that may disturb or remove lead paint on the exterior of any building built prior to December 31, 1978 (as would be the case with the proposed project as a result of the demolition of 531 Mission Street), Chapter 36 requires specific notification and work standards, and identifies prohibited work methods and penalties.

Chapter 36 applies to buildings or steel structures on which original construction was completed prior to 1979 (which are assumed to have lead-based paint on their surfaces), where more than ten total square feet of lead-based paint would be disturbed or removed. The ordinance contains performance standards, including establishment of containment barriers that are at least as effective at protecting human health and the environment as those in the most recent *Guidelines for Evaluation and control of Lead-Based Paint Hazards* promulgated by the U.S. Department of Housing and Urban Development. The ordinance also identifies prohibited practices that may not be used in disturbance or removal of lead-based paint. Any person performing work subject to the ordinance shall make all reasonable efforts to prevent migration of lead paint contaminants beyond containment barriers during the course of the work, and any person performing regulated work shall make all reasonable efforts to remove all visible lead paint contaminants from all regulated areas of the property prior to completion of the work.

The ordinance includes notification requirements, contents of notice, and requirements for signs. Notification includes notifying bidders for the work of any paint-inspection reports verifying the presence or absence of lead-based paint in the regulated area of the proposed project. Prior to commencement of work, the responsible party (owner or contractor) must provide written notice to the Director of Building Inspection of the location of the project; the nature and approximate square footage of the painted surface being disturbed and/or removed; anticipated job start and completion dates for the work; whether the responsible party has reason to know or presume that lead-based paint is present; whether the building is residential or non-residential, owner-occupied or rental property; the approximate number of dwelling units, if any; the dates by which the responsible party has or will fulfill any tenant or adjacent property notification requirements; and the name, address, telephone number, and pager number of the party who will perform the work. (Further notice requirements include Sign When Containment is Required, Notice by Landlord, Required Notice to Tenants, Availability of Pamphlet related to protection from lead in the home, Notice by Contractor, Early Commencement of Work [by Owner, Requested by Tenant], and Notice of Lead Contaminated Dust or Soil, if applicable.) The ordinance contains provisions regarding inspection and sampling, and enforcement, and describes penalties for non-compliance with the requirements of the ordinance.

These regulations and procedures required as part of the San Francisco Building Code would ensure that potential impacts due to lead-based paint would be reduced to a level of insignificance. Therefore, no further mitigation is required.

CHAPTER IV

MITIGATION MEASURES IDENTIFIED IN THIS REPORT TO MINIMIZE POTENTIAL ADVERSE IMPACTS OF THE PROJECT

In the course of project planning and design, measures were identified in the 1986 FEIR that would reduce or eliminate potential environmental impacts of the approved project. Because this is a Supplemental EIR, measures from the 1986 FEIR that are still applicable to the proposed project have been reprinted below along with those measures that have been identified in this SEIR. (Unless otherwise indicated, all of the measures listed below were originally identified in the 1986 FEIR.) In instances where a measure from the 1986 FEIR is still applicable but its language has changed, the new language is provided and the measure is noted as revised. All of the measures listed below would be voluntarily adopted by the current project sponsor or project architect and contractor and thus are proposed as part of the project. Measures from the 1986 FEIR that are no longer applicable to the project are listed in Appendix C along with an explanation of why each is not applicable.

CULTURAL RESOURCES

- Given the location and depth of excavation proposed, and the likelihood that archaeological resources would be encountered on the project site, the sponsor has agreed to retain the services of an archaeologist. The archaeologist would carry out a pre-excavation testing program to better determine the probability of finding cultural and historical remains. The testing program would use a series of mechanical, exploratory borings or trenches and/or other testing methods determined by the archaeologist to be appropriate.

If, after testing, the archaeologist determines that no further investigations or precautions are necessary to safeguard potentially significant archaeological resources, the archaeologist would submit a written report to the Environmental Review Officer (ERO), with a copy to the project sponsor. If the archaeologist determines that further investigations or precautions are necessary, he/she shall consult with the ERO and they shall jointly determine what additional procedures are necessary to minimize potential effects on archaeological resources.

These additional mitigation measures would be implemented by the project sponsor and might include a program of on-site monitoring of all site excavation, during which the archaeologist would record observations in a permanent log. The monitoring program, whether or not there are finds of significance, would result in a written report to be submitted first and directly to the ERO, with a copy to the project sponsor. During the monitoring program, the project sponsor would designate one individual on site as his/her representative. This representative would have the authority to suspend work at the site to give the archaeologist time to investigate and evaluate archaeological resources should they be encountered.

Should evidence of cultural resources of potential significance be found during the monitoring program, the archaeologist would immediately notify the Environmental Review Officer (ERO), and the project sponsor would halt any activities which the archaeologist and the ERO jointly determine could damage such cultural resources. Ground disturbing activities which might damage cultural resources would be suspended for a total maximum of four weeks over the course of construction.

After notifying the ERO, the archaeologist would prepare a written report to be submitted first and directly to the ERO, with a copy to the project sponsor, which would contain an assessment of the potential significance of the find and recommendations for what measures should be implemented to minimize potential effects on archaeological resources. Based on this report, the ERO would recommend specific additional mitigation measures to be implemented by the project sponsor. These additional mitigation measures might include a site security program, additional on-site investigations by the archaeologist, and/or documentation, preservation, and recovery of cultural material.

Finally, the archaeologist would prepare a report documenting the cultural resources that were discovered, an evaluation as to their significance, and a description as to how any archaeological testing, exploration and/or recovery program was conducted.

Copies of all draft reports prepared according to this mitigation measure would be sent first and directly to the ERO for review. Following approval by the ERO, copies of the final report(s) would be sent by the archaeologist directly to the President of the Landmarks Preservation Advisory Board and the California Archaeological Site Survey Northwest Information Center. Three copies of the final archaeology report(s) shall be submitted to the Office of Environmental Review, accompanied by copies of the transmittals documenting its distribution to the President of the Landmarks Preservation Advisory Board and the California Archaeological Site Survey Northwest Information Center. (*Revised and expanded from 1986 FEIR.*)

TRANSPORTATION

- During a construction period, construction truck movement would be permitted only between 9:00 a.m. and 3:30 p.m. to minimize peak-hour traffic conflicts and to accommodate queueing of Muni buses prior to the peak hours. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering of the Department of Public Works, the Fire Department, Muni and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects. To minimize cumulative traffic impacts due to lane closures during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are planned for construction or later become known.

AIR QUALITY

- The project sponsor would require the contractor(s) to spray the site with water during demolition, excavation, and construction activities; spray unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand or other such material; and sweep surrounding streets during demolition, excavation, and construction at least once per day to reduce particulate emissions.

Ordinance 175-91, passed by the Board of Supervisors on May 6, 1991, requires that non-potable water be used for dust control activities. Therefore, the project sponsor would require that the contractor(s) obtain reclaimed water from the Clean Water Program for this purpose. The project sponsors would require the project contractor(s) to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as a prohibition on idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period. (*Revised from the 1986 FEIR*)

NOISE

- The construction contract would require that the project contractor muffle and shield intakes and exhausts, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible, so that noise would not exceed limits stated in the City's Noise Ordinance (Article 29, San Francisco Administrative Code, 1972).
- The project sponsor would require the general contractor to construct barriers around the site, and around stationary equipment such as compressors, which would reduce construction noise by as much as five dBA, and to locate stationary equipment in pit areas or excavated areas, as these areas would serve as noise barriers.
- The project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. The actual pounding from pile driving would occur during a five- to eight-minute span per pile.
- The project sponsor would require that the construction contractor limit pile driving activity to result in least disturbance to neighboring uses. Pile driving would be limited to the hours between 11 p.m. and 7 a.m. Mondays through Saturdays and 11 p.m. and 8 a.m. on Sundays to minimize disturbance to the occupants of Golden Gate University. This would require a work permit from the Director of Public Works pursuant to San Francisco Noise Ordinance Section 2907(c).
- As recommended by the Environmental Protection Element of the San Francisco General (Master) Plan, an analysis of noise reduction measurements would be prepared by the project sponsor and recommended noise insulation features would be included as part of the proposed building. For example, such design features would include fixed windows and climate control.

GEOLOGY/TOPOGRAPHY

- If dewatering were necessary, any groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to reduce the amount of sediment entering the storm drain/sewer lines.
- Should dewatering be necessary, the final soils report would address the potential settlement and subsidence impacts of this dewatering. Based upon this discussion, the soils report would contain a determination as to whether or not a lateral and settlement survey should be done to monitor any

movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, the Department of Public Works would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring. Groundwater observation wells would be installed to monitor the level of the water table and other instruments would be used to monitor potential settlement of subsidence. If, in the judgment of the Special Inspector, unacceptable subsidence were to occur during construction, groundwater recharge would be used to halt this settlement. Costs for the survey and any necessary repairs to service under the street would be borne by the contractor.

- The final soils report would also recommend whether or not watering of piles of adjacent structures was necessary. If it were found to be necessary, the project sponsor would ensure that the general contractor complied.

HAZARDS

- To expedite implementation of the City's emergency response plan, the project sponsor would prominently post information for building occupants concerning what to do in the event of a disaster.

MEASURES IDENTIFIED IN THIS SEIR

- A health and safety plan would be prepared by the project sponsor that addresses potential construction worker exposure to volatile organic compound vapors and incidental contact with potentially-contaminated groundwater.
- If excavation activities during construction require dewatering, water removed from the excavation should be characterized and managed in accordance with all applicable requirements. Such activities may include temporary containment on site, waste characterization by testing at an analytical laboratory, and appropriate off-site disposal. The specific activities that may be required should be determined based on the actual site conditions and construction activities.

CHAPTER V

SIGNIFICANT EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

In accordance with Section 21100(b)(2)(A) of the California Environmental Quality Act (CEQA), and with Section 15126(b) of the State *CEQA Guidelines*, the purpose of this chapter is to identify impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the project, or by other mitigation measures that could be implemented, as described in Chapter IV, Mitigation Measures.

As analyzed in the Environmental Impacts section (Chapter 4) of the 1986 FEIR, and noted on p. 138 of the same document, the approved project was found to have no potential project-specific impacts. The approved project did contribute to cumulatively significant air quality impacts (specifically, total suspended particulate emissions).

This DSEIR does not identify any new significant impacts related to the proposed project and concludes that the project would not contribute substantially to any significant cumulative effects. (See the Air Quality section of this SEIR for a discussion of the change in methodology for assessment of cumulative air quality effects.) This chapter is subject to final determination by the City Planning Commission as part of its certification process for the SEIR. The Final SEIR will be revised, if necessary, to reflect the findings of the Commission.

CHAPTER VI

ALTERNATIVES TO THE PROPOSED PROJECT

This chapter identifies alternatives to the proposed project, discusses environmental impacts associated with each alternative. Project decision-makers could adopt any of the following alternatives, if feasible, instead of approving the proposed project. The alternatives that are provided below are the essentially the same as the alternatives discussed in the 1986 FEIR, although these have been revised to reflect the current project design and changes in the environmental setting of the project site. When appropriate, the reader is referred to the discussion in the 1986 FEIR rather than repeating the still relevant language here. Where the alternatives discussed below differ substantially from those in the 1986 FEIR, a corresponding explanation is provided. No new alternatives have been provided.

A. ALTERNATIVE A: NO PROJECT

Under No Project conditions, the site would remain in its existing condition. No new development would take place on the site. The existing building on the site is assumed to continue to be partially occupied by office and retail space. None of the potential impacts related to the proposed project would occur. The environmental characteristics of this alternative would be generally as described in the 1986 FEIR Alternatives section (pp.139-140), the only difference being that the building at 535 Mission Street (rated "C" by San Francisco Architectural Heritage) would not be part of on-site conditions (due to its demolition since certification of the 1986 FEIR). Given the site's location in the area in which the Downtown Plan encourages office development, it could reasonably be expected that a subsequent development proposal would include construction of additional office space.

B. ALTERNATIVE B: NO TRANSFER OF DEVELOPMENT RIGHTS, 9.1 FAR

The project as proposed would include the transfer of development rights (TDR) from unidentified sites, allowing for an FAR of 15.5:1 rather than the basic allowable FAR of 9:1 without TDR. This alternative considers a building without TDR and thus at an FAR of 9:1.

Although no specific design has been created for this alternative, it would result in a building substantially reduced in size and height from the proposed project. Assuming this alternative were to cover the entire site, as would the proposed project it would result in a building approximately 180 feet tall, assuming no setbacks. This alternative would have more parking (about three additional spaces) than the project because no space would be required in the basement for service loading.

Like the proposed project, this alternative would require demolition of the un-rated building at 531 Mission Street. As such, the impacts would be similar to those described for Alternative B1 in the 1986 FEIR on pp. 141-143, although effects related to the demolition of the building at 535 Mission Street would not occur (due to its demolition since certification of the 1986 FEIR).

Wind effects would be similar to those of the proposed project because the alternative design would create a multi-story street wall. Shadows on the Golden Gate University entry plaza and on the sun terrace of 100 First Street would be similar to those from the proposed project because, at about 180 feet in height, the alternative structure would be tall enough to cast shadow on much of the sun terrace and across Mission Street. However, during the summer when the shadows cast by the project would be at their shortest, project-related shadows would cover less of the Golden Gate University plaza in the morning hours and less of the 100 First Street open space in the afternoon hours. Transportation and air quality impacts would be reduced, and would remain less-than-significant. This alternative would be less visible from medium- and long-range views.

Reader: It should be noted that the 1986 FEIR included two subalternatives (a twin cylinder design alternative and a reduced shadow alternative) that involved no transfer of development rights. The primary difference between the two alternatives was that one maintained the diagonal cut on the building's southeast corner, as was proposed as part of the original project, and one did not. Although the current project does not include a diagonal cut and no significant shadow effects are identified for the current project, both design options would still be possible under this alternative. The design option with a diagonal cut would reduce non-significant shadow impacts on the 100 First Street open space.

C. ALTERNATIVE C: NO BULK EXCEPTIONS

This alternative would include setbacks above the base as called for in Section 132.1(c) of the San Francisco Planning Code, Separation of Towers. Therefore, as opposed to the proposed project, this alternative would be set back above the base 15 feet from the eastern interior property line rather than 12 feet as currently proposed. Also, the current project's upper tower would exceed bulk limitations established by Section 270 of the Planning Code, but this alternative would not. As such, this alternative would not require an exception to Planning Code bulk limits.

As a result of not seeking exceptions to these requirements, this alternative would have slightly less office space and about 15 percent less overall density than the project. The effects of this alternative would be similar to those described for Alternative C1 in the 1986 FEIR Alternatives section (pp. 144-145). The only manner in which this alternative would not be in compliance with Planning Code requirements is related to Section 148, ground-level wind effects. Physical effects would be virtually indistinguishable from those of the project, since the amount of office space and the building shape would be similar.

Another version of this alternative could be achieved by reducing the floor size of the upper tower, thus conforming with bulk and setback limitations of the Planning Code, but adding three additional floors and maintaining approximately the same amount of office space as in the proposed project. The resultant increase of the building's height by about 40 feet would result in the casting of longer shadows, parts of which would reach publicly accessible private open spaces, such as Fremont Center Plaza on First Street between Market and Mission Streets. A taller building would also be slightly more noticeable in long-range views of the site, and could require reassessment to determine changes in wind conditions and compliance with San Francisco Planning Code Section 148. This alternative would not result in new shadow effects on public open spaces subject to Proposition K restrictions.

Reader: It should be noted that the 1986 FEIR included two subalternatives that involved no exceptions to required approvals. One subalternative was for a design that required no exception to the Planning Code bulk requirements, similar to Alternative B described above. The other subalternative was for a design that required no exception to the Planning Code setback requirements. Because the current design differs from the 1986 FEIR design in that it would no longer require an exception from the five-foot setback requirement, no corresponding subalternative has been provided here.

D. ALTERNATIVE D: NO PARKING

Under this alternative, an office tower would be constructed on the site just as it would under the currently proposed project, although without the proposed 39 parking spaces in the basement level. Instead, the basement level would contain only service/mechanical space and two service vehicle loading spaces. All impacts of this alternative would be similar to the project, as described in the 1986 FEIR Alternatives section (pp. 147), except that there would be fewer vehicle trips to the site. As a result, employees and visitors would park elsewhere in the vicinity, and project vehicle trips would be dispersed throughout a wider area.

Reader: Alternative E (13.5:1 FAR Alternative), originally considered in the 1986 FEIR, is not analyzed here because it is no longer considered necessary or useful for reducing or mitigating significant project impacts. This alternative was originally considered because it was the project sponsor's preferred development program, which is not the case for the current project sponsor. Impacts addressed by this alternative are adequately assessed by the current project and Alternative B, which together frame the level of development and related impacts that would occur under a 13.5:1 FAR alternative.

CHAPTER VII

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Sonoma State University
Rohnert Park, CA 94928
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California Department of Transportation
Ofc. of Transportation Planning – B
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Oakland, CA 94623-0660
Attn: Nandini Shridhar

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Oakland, CA 94604-2050
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Association of Bay Area Governments
101 8th Street
Oakland, CA 94607
Attn: Jean Pedersen

Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay St., Suite 1400
Oakland, CA 94612
Attn: Steven Hill

Metropolitan Transp. Commission
101 Eighth Street
Oakland, CA 94612

Kenneth Scheidig
General Counsel's Office
AC Transit
1600 Franklin Street
Oakland, CA 94612

BART
Planning Division
800 Madison Street
Oakland, CA 94607

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1660 Mission Street
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25 Van Ness Ave., Suite 700
San Francisco, Ca 94102

Marcia Rosen, Director
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City Hall, Room 448
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Hetch Hetchy Water & Power
1155 Market Street, 4th Floor
San Francisco, CA 94103
Attn: John Deakin, Director

Public Utilities Commission
1155 Market Street
San Francisco, CA 94102
Attn: Anson B. Moran, General Mgr.

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McLaren Lodge, Golden Gate Park
Fell and Stanyan Streets
San Francisco, CA 94117
Attn: Deborah Learner

Police Department
Planning Division, Hall of Justice
850 Bryant Street, Room 500
San Francisco, CA 94103
Attn: Capt. Timothy Hettrich

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25 Van Ness Avenue
San Francisco, CA 94102
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Division of Planning & Research
698 Second Street
San Francisco, CA 94107
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San Francisco Municipal Railway
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Richard & Janice Fiore
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Bank of America Etc.
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562 Mission Street LLC
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Federal Deposit Insurance Corp.
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KSW Properties
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CHAPTER VIII

APPENDICES

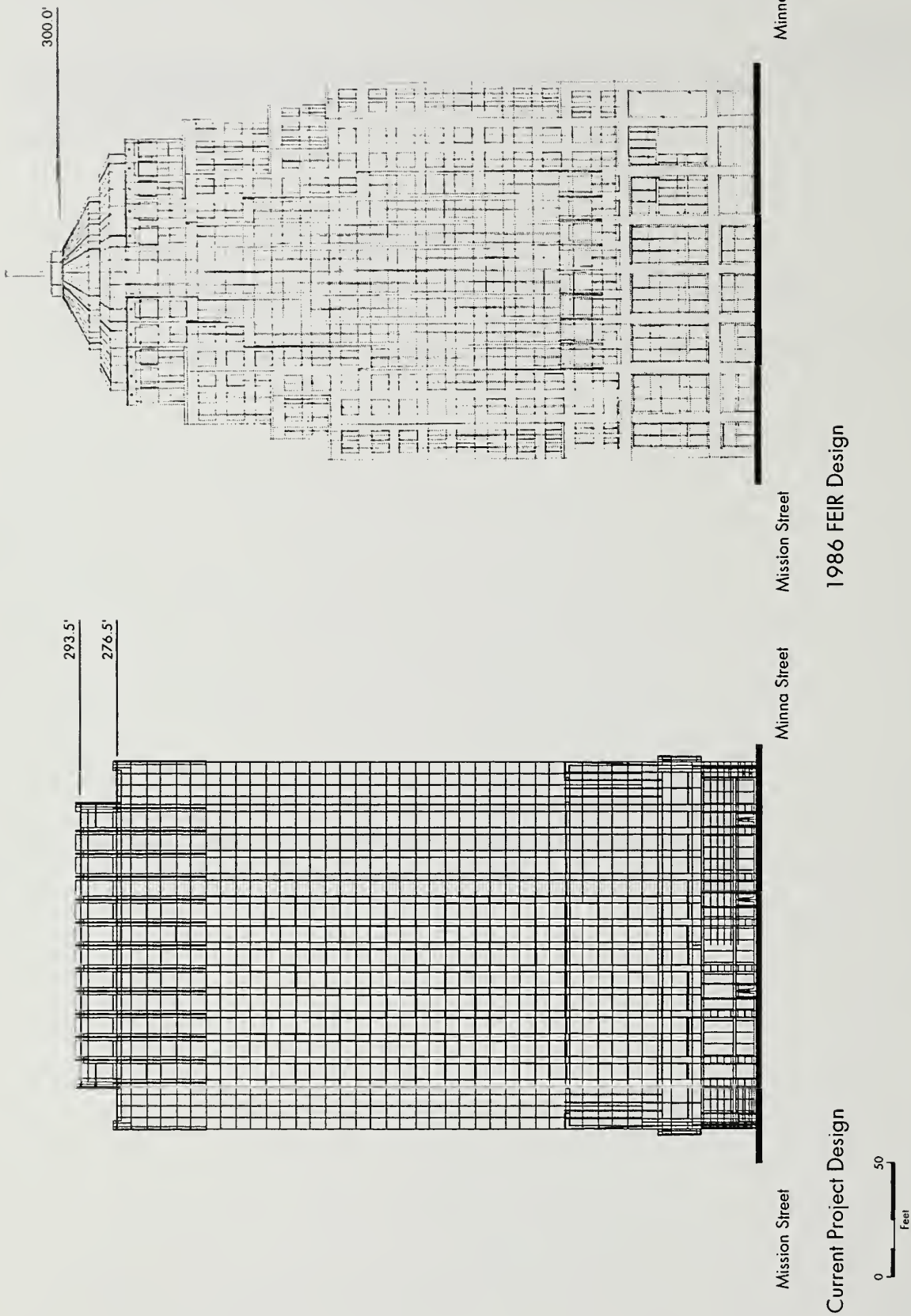
A: Comparison of 1986 FEIR Design With Current Design

B. Technical Memorandum—Potential Wind Conditions, August 4, 1999

C. Mitigation Measures Identified in the 1986 FEIR That Are No longer Applicable

APPENDIX A

COMPARISON OF 1986 FEIR DESIGN WITH CURRENT DESIGN



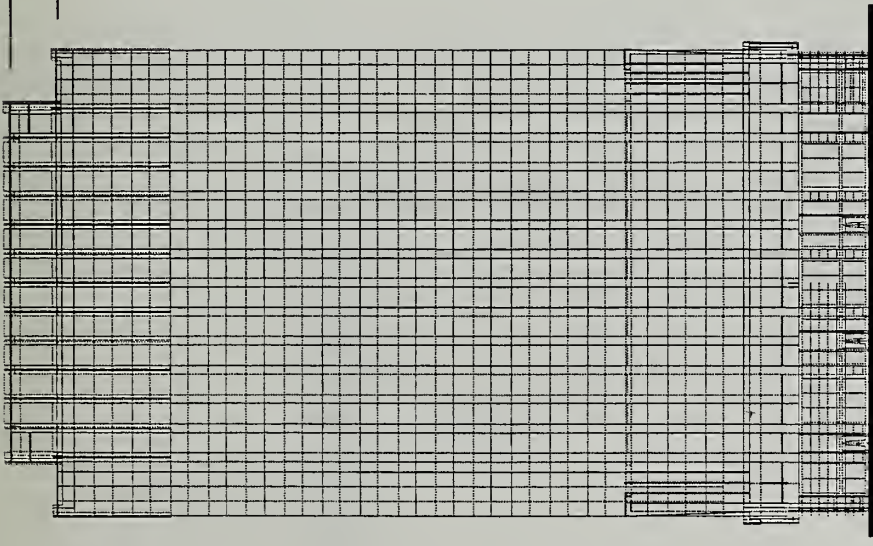
SOURCE: Hellmuth, Obata & Kassabaum; Heller & Leake ■ 535 Mission Street / 980392

Figure A-1
West Elevation Comparison

300.0'

293.5'

276.5'



Minna Street

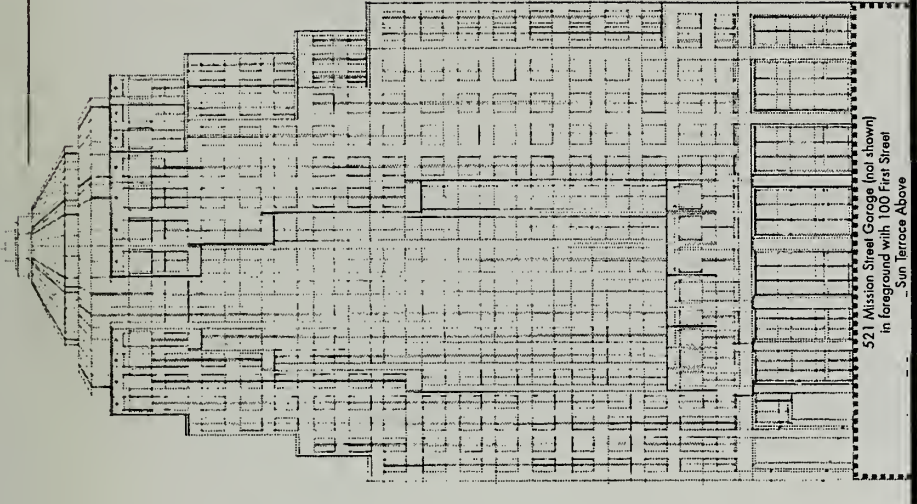
Mission Street

Minna Street

Mission Street

Current Project Design

1986 FEIR Design



521 Mission Street Garage (not shown)
in foreground with 100 First Street
Sun Terrace Above

535 Mission Street / 980392

SOURCE: Hellmuth, Obata & Kassabaum; Heller & Leake

Figure A-2
East Elevation Comparison

293.5'

276.5'



Current Project Design

0 50 Feet

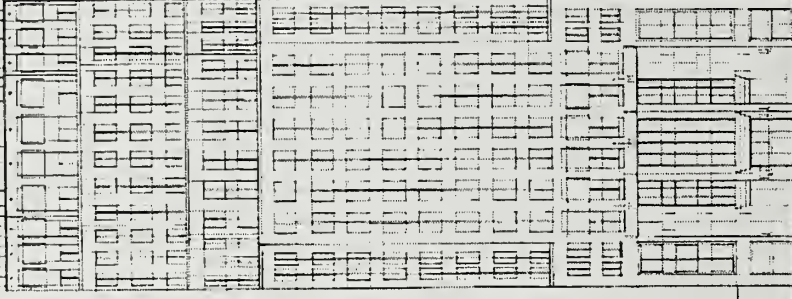
SOURCE: Hellmuth; Obata & Kassabaum; Heller & Leake

535 Mission Street / 980392

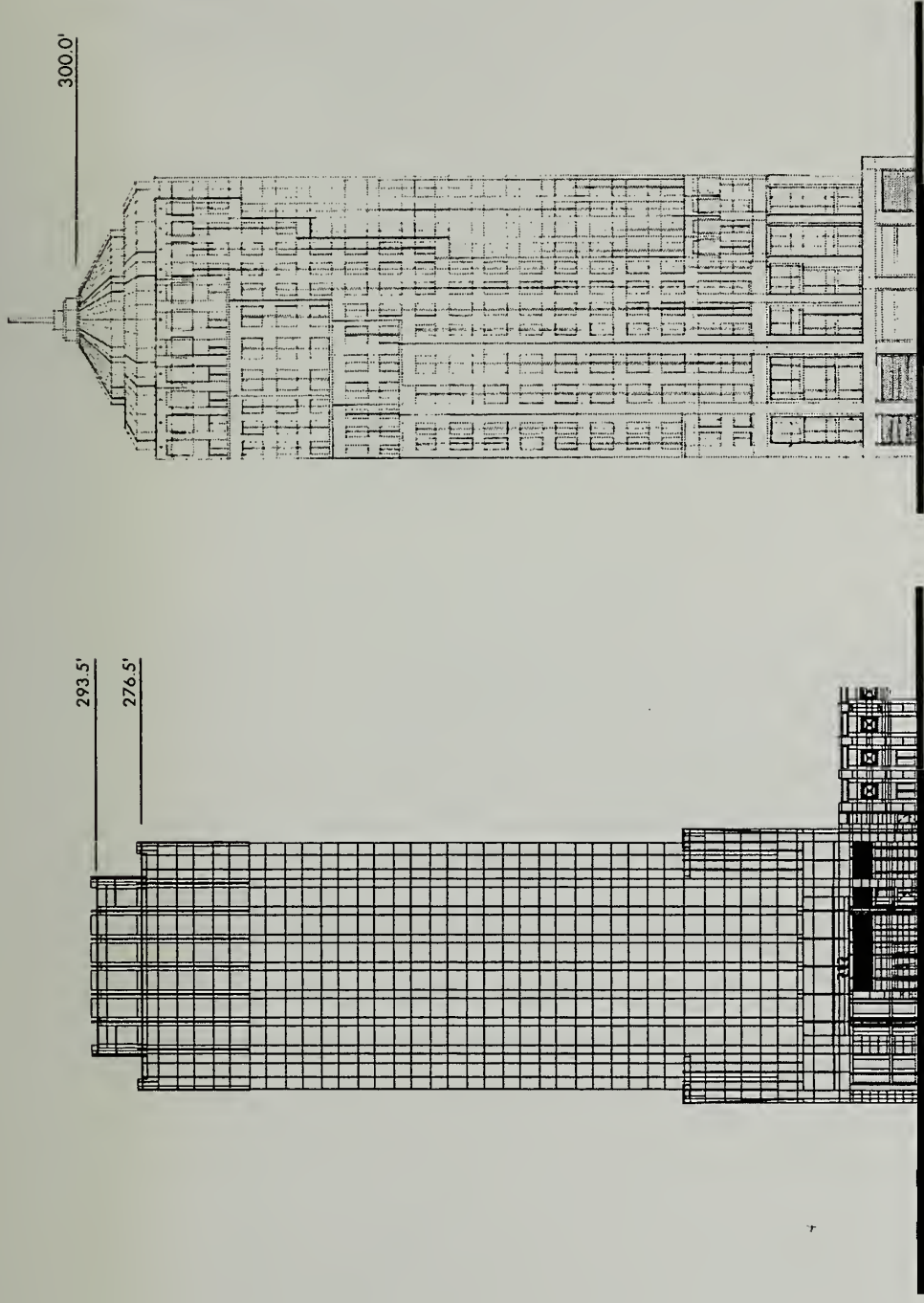
Figure A-3

North Elevation Comparison

300.0'

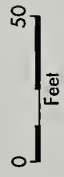


1986 FEIR Design



Current Project Design

1986 FEIR Design



APPENDIX B

TECHNICAL MEMORANDUM – POTENTIAL WIND CONDITIONS,
AUGUST 4, 1999

TECHNICAL MEMORANDUM

TO: **Hillary Gitelman**
San Francisco Department of City Planning
1660 Mission Street
San Francisco, CA 94103

FROM: **Charles Bennett**
Environmental Science Associates
225 Bush Street, Suite 1700
San Francisco, CA 94104

DATE: **February 4, 1999, Rev. August 4, 1999**

SUBJECT: **Potential Wind Conditions
Proposed 535 Mission Street High-Rise
San Francisco, California
ESA 980392**

I. INTRODUCTION AND OVERVIEW

Wind-tunnel tests were performed for the 535 Mission Street High-Rise proposed to be located on the block bounded by First, Mission, Second and Minna Streets, in the City of San Francisco, in order to define the pedestrian wind environment that would exist around the proposed project. Pedestrian-level wind speeds were measured at selected points for the site as it presently exists and for the proposed project in the existing setting, to quantify resulting pedestrian-level winds in public spaces near the proposed project. A project alternative and a cumulative development scenario that included the project were also tested. Two sets of tests were performed, one in December 1998 and one in July 1999. The results of both sets are reported in this revised memorandum.

Details of the background and test methods are presented in Section II, Background. Test results and discussion are presented in Section III, Study Results, and Section IV summarizes the findings and conclusions. An overview of the test results and conclusions follows.

Test 1: Existing Setting - TEST I - July 1999

The existing setting consists of all existing buildings together with all approved, but yet unbuilt or uncompleted buildings in the vicinity of the site¹. Approved, but yet unbuilt or uncompleted buildings include the 101 Second Street building (under construction) at the corner of Second and Mission Streets, The Century (Natomia Mews) building across Minna Street from 101 Second Street and the 524 Howard Street building. Further upwind, in the Yerba Buena Redevelopment Area are the Millennium Building on Central Block 1, the Sony Entertainment Building on Central Block 2 and the Starwood Hotel (under construction) on East Block 2. Also included is the Moscone Expansion Project, at Fourth Street.

The existing wind conditions range from sheltered to moderately windy; the average wind speed is just under 9 mph. Wind speeds in pedestrian areas range from 4 mph to 14 mph. In general, the highest ground-level wind speeds in the vicinity of the site occur along Minna Street, west of Shaw Alley, where wind speeds of 13 mph and 14 mph exist at two locations and on the south side of Mission Street, west of Shaw,

¹ Other approved or under construction buildings in the area were not included in the existing setting, for the following reasons: the One Second Street building (approved) is not expected to be built in the foreseeable future; and, the 246 Second Street Condominium High-Rise is too far south to affect the wind conditions of the site.

where wind speeds of 13 mph and 14 mph exist at two locations. The wind speeds² at nine of the 31 applicable existing locations exceed the Planning Code's pedestrian-comfort criterion value of 11-mph.

Wind speeds of 1 mph to 6 mph exist at five seating area locations in nearby public open spaces, the 100 First Street sun terrace and the entrance to Golden Gate University. All five meet the seating-comfort criterion of the Planning Code.

The Code's wind hazard criterion currently is exceeded at two of the 36 locations. Both exceedances occur on Minna Street, west of the project site. The total duration of these exceedances is 3 hours per year.

Test 2: Project in the Existing Setting - TEST II - July 1999

The project setting consists of the project added to the existing setting buildings.

With the project, wind conditions would remain sheltered to moderately windy. Compared to the Existing conditions, the average wind speed would decrease to less than 9 mph. The Project would reduce existing wind speeds at 15 of the 36 locations and increase existing wind speeds at nine locations. Existing wind speeds would remain unchanged at 12 locations.

Wind speeds in pedestrian areas would range from 5 mph to 14 mph. The highest wind speeds in the vicinity (13 mph and 14 mph) would occur on Minna Street, west of Shaw Alley, while wind speeds of 12 mph would occur on the south side of Mission Street, west of the project site.

With the project, a total of six existing exceedances of the pedestrian-comfort criterion would continue to occur. The project would add two new exceedances and would eliminate three of the nine existing exceedances.

Wind speeds would increase at three of the five existing open space locations³. Wind speeds at one location on the 100 First Street sun terrace would exceed the seating-comfort criterion value of 7 mph; this would be a new exceedance.

On Minna Street, wind speeds would increase by as much as 4 mph adjacent to the Project, and remain unchanged or decrease by as much as 2 mph at other locations. On Mission Street wind speeds would vary, increasing or decreasing by as much as 2 mph on the north and south sides of Mission Street, east of Shaw Alley, and decreasing by as much as 3 mph west of Shaw Alley.

Hazard Conditions

The wind hazard criterion currently is exceeded at two locations. With the Project, one existing exceedance, with a duration of about 1 hour per year, would be eliminated. Another exceedance, with a duration of about 2 hours per year, would remain. The total duration of all exceedances would be about 2 hours per year.

² The term *wind speed* refers here to *equivalent wind speed* (including the effects of turbulence) that are exceeded a specified percentage of time: 10% of the time for pedestrian comfort comparisons and one hour per year for wind hazard comparisons. See Section II for definitions.

³ Although portions of the project open space are proposed to be used for an outdoor cafe, the seating would not be permanent seating and is not regarded as falling under the seating-comfort criterion of the Planning Code.

Project Mitigation Measures

The exceedance of the seating comfort criterion at one location in the sun terrace can be mitigated by the use of street furniture or landscaping.

No mitigation is required for exceedances of the pedestrian-comfort criterion. One new pedestrian-comfort criterion exceedance would be caused by the Project, at the corner of Shaw and Minna Streets. In addition, three of the nine existing exceedances would be eliminated by the Project. Another project exceedance and another existing exceedance would be eliminated when the cumulative development of the immediate vicinity has occurred.

The Project open space would include portions of the width of Shaw Alley, the project open space, for most of the alley's length, for outdoor seating and cafe use. However, the wind speed in this area would not meet the seating-comfort criterion. Further mitigations, such as the use of porous screens (i.e. lattice work or fencing with planters) oriented perpendicular to Shaw Alley, may be sufficient to slow winds along Shaw Alley from Mission to Minna Street. This combination of measures may provide wind conditions suitable for the intended cafe uses for much of the time.

Test 3: Project with Cumulative Development - TEST II - July 1999

The Project with Cumulative Development setting adds all reasonably foreseeable future high-rises to the project setting. The buildings added for the Cumulative Development setting were: 554 Mission, One Second Street, and two proposed 400 to 500 ft. high-rise hotel, residential and commercial high-rise buildings on Yerba Buena East Block 1 and Yerba Buena East Block 2⁴.

With the Project with Cumulative Development, wind conditions would remain sheltered to moderately windy; the average wind speed would decrease slightly, compared to Project conditions, to about 8 mph or slightly less than the average speed under Existing conditions. The Project with Cumulative Development would reduce Project wind speeds at 15 of the 36 locations and increase Project wind speeds at two locations. Project wind speeds would remain unchanged at 19 locations.

Cumulative development would eliminate one of the existing exceedances and two of the project exceedances of the pedestrian-comfort criterion, and would leave five of the existing exceedances remaining, for a total of five pedestrian-comfort exceedances.

Wind speeds would decrease at four of the five open space locations. The one Project exceedance of the seating-comfort criterion in the 100 First Street sun terrace (#32) would be eliminated.

Cumulative development would eliminate the existing wind hazard exceedance and would not cause a new wind hazard exceedance.

On Minna Street, wind speeds would decrease by as much as 2 mph adjacent to the Project, and remain unchanged or decrease by as much as 1 mph at other locations. On Mission Street east of Shaw Alley, wind speeds would remain unchanged or decrease by as much as 1 mph. On the south side of Mission Street, west of Shaw

⁴ Other pending, approved or under construction buildings were not included in the cumulative development scenario, for the following reasons: the pending Bloomingdales building is too far west to affect the wind conditions of the site; and, the 246 Second Street Condominium High-Rise is too far south to affect the wind conditions of the site. Note that the One Second Street building was included in the Cumulative Development test.

Alley, wind speeds would increase by as much as 2 mph mid-block between Shaw and Second Street, with locations closer to Second Street remaining unchanged.

At the nine points (#3-8, 12, 35, 36) on Minna Street, between First and Second Streets, wind speeds would range from 5 mph to 14 mph, with the higher speeds continuing to occur only west of Shaw Alley. At the one location (#6) on Shaw Alley, wind speeds would decrease by 2 mph, to become 10 mph. Wind speeds at three (#7, 35, 36) of the nine locations would continue to exceed the pedestrian comfort criterion; the number of exceedances on Minna would decrease to three.

Hazard Conditions

With the project, the wind hazard criterion still would be exceeded at one location on Minna Street, west of Shaw Alley. With the Project plus Cumulative Development in place, the project exceedance would be eliminated.

Test 4: Alternative in the Existing Setting - TEST I - December 1998

The alternative setting consists of the alternative design added to the existing setting from TEST I, December 1998. Note that adjustments have been made to the wind speed values from the TEST I setting as described in Section III.

With the alternative, wind conditions would remain sheltered to moderately windy. Compared to the Existing conditions, the average wind speed would increase, by about 1/2 mph, to just over 9 mph. The alternative would reduce existing wind speeds at seven of the 34 locations and increase existing wind speeds at 12 locations. Existing wind speeds would remain unchanged at 15 locations.

Wind speeds in pedestrian areas would range from 6 mph to 16 mph. The highest wind speeds in the vicinity (13 mph and 16 mph) would occur on Minna Street, west of Shaw Alley, while wind speeds of 12 mph and 13 mph would occur on the south side of Mission Street, west of the project site.

With the alternative, eight of nine existing exceedances (including locations #35 and 36) of the pedestrian-comfort criterion would continue to occur. The alternative would add no new pedestrian comfort exceedance and would eliminate one existing exceedance.

Wind speeds would increase at two of the five existing open space locations⁵. Wind speeds at one location on the 100 First Street sun terrace would exceed the seating-comfort criterion value of 7 mph; this would be a new exceedance.

On Minna Street, wind speeds would increase by as much as 3 mph adjacent to the alternative, and remain unchanged or decrease by as much as 2 mph at other locations. On Mission Street wind speeds would vary, with increases of up to 2 mph on the north and south sides of Mission Street, east of Shaw Alley, and decrease by as much as 2 mph west of Shaw Alley.

Hazard Conditions

With the alternative, the existing exceedance on Minna Street, west of Shaw Alley would continue, with no change in its 1 hour per year duration.

⁵ Although portions of the project open space are proposed to be used for an outdoor cafe, the seating would not be permanent seating and is not regarded as falling under the seating-comfort criterion of the Planning Code.

II. BACKGROUND

Tall buildings and structures can strongly affect the wind environment for pedestrians. In cities, groups of structures tend to slow the winds near ground level, due to the friction and drag of the structures themselves. Buildings that are much taller than the surrounding buildings intercept and redirect winds that might otherwise flow overhead, and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence. These redirected winds can be relatively strong and also relatively turbulent, and can be incompatible with the intended uses of nearby ground-level spaces.

Moreover, structure designs that present tall flat surfaces square to strong winds can create ground-level winds that can prove to be hazardous to pedestrians in the vicinity. It is worth noting, however, that structural measures can be developed (usually overhead structures) to reduce the speed of the winds to levels that are acceptable.

Although the proposed high-rise building would be large enough to be expected to cause ground-level wind problems for pedestrians if it were standing alone, the placement of the structure near a number of high-rise buildings along Market Street would be expected to reduce the speed of winds from the west and northwest while still exposing the project site to the potential of turbulent winds. Wind-tunnel testing is necessary to determine whether or not unsuitably strong winds would be present after the project is built.

Existing Climate and Wind Conditions

Average winds speeds in San Francisco are the highest in the summer and lowest in winter. However, the strongest peak winds occur in winter. The highest average wind speeds occur in mid-afternoon and the lowest in the early morning. Westerly to northwesterly winds are the most frequent and strongest winds during all seasons. Of the 16 primary wind directions, four have the greatest frequency of occurrence as well as they make up the majority of the strong winds that occur; these are northwest, west-northwest, west and west-southwest winds.

Data describing the speed, direction, and frequency of occurrence of winds were gathered at the old San Francisco Federal Building at 50 United Nations Plaza (at a height of 132 ft.) during the six-year period, 1945 to 1950. Measurements taken hourly and averaged over one-minute periods have been tabulated for each month (averaged over the six years) in three-hour periods using seven classes of wind speed and 16 compass directions. Analysis of these data shows that during the hours from 6:00 a.m. to 8:00 p.m., about 70% of all winds blow from five of the 16 directions, as follows: Northwest (NW), 10%; West Northwest (WNW), 14%; West (W), 35%; West Southwest (WSW), 2%; Southwest (SW), 9%; and all other winds, 28%. Calm conditions occur 2% of the time. More than 90% of measured winds over 13 mph blow from the NW, WNW, W, WSW, or SW.

Wind Speed and Pedestrian Comfort⁶

The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed. Winds up to four miles per hour (mph) have no noticeable effect on pedestrian comfort. With winds from four to eight mph, wind is felt on the face. Winds from eight to thirteen mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole. Winds from 13 to 19 mph will raise loose paper, dust and dry soil, and will disarrange hair. For winds from 19 to 26 mph, the force of the wind will be felt on the

⁶ Lawson, T.V. and A.D. Penwarden, "The Effects of Wind on People in the Vicinity of Buildings," Proceedings of the Fourth International Conference on Wind Effects on Buildings and Structures, London, 1975, Cambridge University Press, Cambridge, U.K., 605-622 1976.

body. With 26 to 34 mph winds, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 34 mph increase difficulty with balance and gusts can blow people over.

City Planning Code Requirements

The City Planning Code Section 148, Reduction of Ground-Level Wind Currents in C-3 (Downtown Commercial) Districts, requires buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10% of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the Code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph as averaged for a single full hour of the year, or 0.011416% of the time. These comfort criteria are based on wind speeds that are measured for one minute and averaged. In contrast, the hazard criterion is based on winds that are measured for one hour and averaged; when stated on the same basis as the comfort criteria winds, the hazard criterion speed is a one-minute average of 36 mph.⁷ The wind ordinance defines equivalent wind speed⁸ as an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence.

Model and Wind Testing Protocols

A 1 inch to 50 foot scale model of the Project site and surrounding several blocks was constructed in order to simulate the Project and its existing and future contexts. The scale model of the Project and surrounding area was provided by ESA. The Project design used was from plans provided by the project architects. The test model was constructed by ESA. The scale models were then tested in a boundary layer wind-tunnel facility at the University of California, Davis, under the direction of Dr. Bruce White. These tests, however, were performed independent of the University.

Two sets of wind-tunnel tests were conducted for three configurations: 1) the Existing Setting, 2) the Project in the Existing Setting, 3) the Project in the likely Cumulative Development setting. The first difference between the two existing settings for December and July tests is that the approval of the 524 Howard Street building made it a part of the setting for the July tests, while it was not part of the existing setting for the December tests. The effect of this difference is discussed in Attachment A. The second difference between the tests is that the project design tested in December is reported here as an Alternative. The Third difference is that the Cumulative case in the December tests includes the Alternative, while the July tests include the Project. The effect of this difference also is discussed in Attachment A. In accordance with the protocol for wind-tunnel testing in Section 148 of the Planning Code, each configuration was wind-tunnel tested for each of four primary wind directions: northwest (NW), west-northwest (WNW), west (W) and west-southwest (WSW).

The test procedure consisted of orienting the selected configuration of the model in the boundary layer wind-tunnel and measuring the wind speed at each of the test locations with a hot-wire anemometer. The model was tested in a wind tunnel that allows testing of natural atmospheric boundary layer flow past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 feet), a test section of 1.22 m (4 feet) wide by 1.83 m (6 feet) high, and an adjustable false ceiling. The adjustable ceiling and turbulence generators allow speeds within the tunnel to vary from 1 meter per second (m/s) to 8 m/s, or 2.2 mph to 17.9 mph.

⁷ Arens, E., "Designing for Acceptable Wind Environment," Transactions Engineering Journal, ASCE 107, No. TE 2, p. 127-141, 1981.

⁸ Equivalent mean wind speed is defined as the mean wind, multiplied by the quantity (one plus three times the turbulence intensity) divided by 1.45.

Wind-speed measurements at each test location were made with a hot-wire anemometer, an instrument that directly relates rates of heat transfer to wind speeds by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. The hot-wire probe is calibrated to an accuracy of within 2% before the test procedure is begun. The hot-wire probe measures the analog voltage for approximately 30 seconds at each test location. When converted to digital signals, this measurement provides approximately 30,000 individual voltage samples that are averaged and the root mean square calculated for each test location. These data, when converted to velocity using the calibration curves, provide the mean velocity and turbulence values used in the calculation of the equivalent wind speed.

By measuring both the mean wind speeds and corresponding turbulence intensities, high wind speeds and gustiness (changes in wind speeds over short periods of time) could be determined. The ratio of near-surface speed to reference wind speed was calculated from the hot-wire measurements. The inherent uncertainty of measurements made with the hot-wire anemometer close to the surface of the model is $\pm 5\%$ of the true values.

These values are compared with the free stream wind as measured in the wind-tunnel. As a result, each wind-tunnel measurement results in a ratio that relates the speed of ground-level wind to the speed at the reference elevation, in this case the height of the Old San Francisco Federal Building. These ratios are the output data from the wind-tunnel tests.

These output data are reduced using a computer program that evaluates the contribution from each tested wind direction to the total wind speed measured at each location for each wind direction. The program first adjusts the wind-tunnel output ratios to account for the differences between the boundary layer profile in the wind-tunnel and the profile as measured at the Old Federal Building located at 50 United Nations Plaza. The program then computes the equivalent wind speed that conforms to the selected criterion, either the wind speed exceeded 10% of the time or the wind speed exceeded one hour or more per year. The program also computes the percentage of time that the wind would exceed the speed criterion selected, and further computes the percentage contribution of each wind direction to the equivalent wind speed and to the excess of the criterion. In addition to the computations for each tested wind direction, the program computes an average ratio and uses this to compute statistics for "Other" winds, which accounts for all remaining wind directions.

The output of the computer program is presented in the Wind-Tunnel Test Results tables for normal winds and for hazardous winds. These tables, appended to this Memorandum, provide the detail of the data and of the intermediate results that are described above.

The wind tunnel ratios were included in the program input, and the results evaluated in the discussions that follow.

Wind Speed Profile Adjustments

The standard Section 148 wind test methodology implicitly assumes that the relationship between height above the ground and wind speed (referred to hereafter as the wind speed profile) is the same in the test area as at the Civic Center weather station. However, wind speed profiles vary from place to place, and the wind speed profiles for the Yerba Buena area are known to differ from those at the Civic Center weather station where data were gathered.

Previously, wind-tunnel measurements of the wind speed profiles for NW, WNW, W and WSW winds were made for the South of Market area. Wind profile adjustment factors were estimated for those wind directions, based on those profile measurements and upon the methodology presented in the American Society of Heating, Refrigeration and Air

Conditioning Engineers (ASHRAE) Handbook, Chapter 14. Based on data from the site's wind speed profiles and previously measured profiles for the Civic Center, the ASHRAE methodology was expanded to create two new categories intermediate to the four presented in Chapter 14. Those categories were assigned for each of the four wind directions at the Old Federal Building meteorological station and for each of the four wind directions at the project site. The assignment provided the values used for alpha and delta, the power-law exponent and the boundary-layer thickness respectively, and ultimately the factors for normalizing that Civic Center meteorological data to the wind speed at the project site. For South of Market sites, and in the nearby Yerba Buena Redevelopment Area, WSW wind speeds are reduced by about 27% and W wind speeds by 13%, while NW and WNW wind speeds remain the same compared to winds in the Civic Center. Although the project site is close to the Yerba Buena area, it is quite close to a cluster of high-rise buildings along Market Street, and should reflect that wind regime. For that reason, the more conservative unadjusted values are used. The wind speeds reported below, in Section III. Test Cases and Study Results, reflect the use of these unadjusted values.

III. TEST CASES AND STUDY RESULTS

Introduction

Wind-tunnel tests were conducted for four test scenarios⁹. Thirty-six test locations were studied for each scenario for the four prevailing wind directions: northwest, west-northwest, west, and southwest. These winds are the most common in San Francisco, and are therefore the most representative for evaluation of the proposed Project.

In general, the test locations focus on sidewalks of Mission and Minna Streets, and nearby open spaces. Four test points were placed on the 100 First Street sun terrace, adjacent to the project site, and one at the entrance to Golden Gate University. One location was placed on Shaw Alley, at Minna Street. Just downwind from the site, two test locations were placed in the open parking area between Minna and Natoma Streets and one location placed on Natoma Street, east of the Transbay Terminal access ramp.

Along Mission Street were nineteen locations (#1, 2, 9-11, 13, 14, 17-19, 24-30), with nine (#9, 13, 17, 20, 24, 25, 27, 29, 30) on the north side of Mission and ten (#1, 2, 10, 11, 14, 16, 18, 19, 26, 28) on the south side of Mission. Nine points (#3-8, 12, 35, 36)¹⁰ were located on Minna Street, between First and Second Streets, and one point (#6) was located on Shaw Alley. Four test locations (#31-34) were located on the 100 First Street sun terrace and one (#15) on the Golden Gate University open area. Two test points (#21, 22) were placed in the open parking area between Minna and Natoma Streets, and one (#23) was located on Natoma Street, east of the Transbay Terminal access ramp.

Note that these groupings, as well as others used in the discussions of existing conditions and project conditions, may include some individual locations in more than one group for discussion purposes.

To the extent possible, all hot-wire measurements were taken at the same series of surface points around the project site for all test configurations and wind directions.

For the purpose of identifying the applicable wind comfort criterion, five of the 34 existing test locations represent existing outdoor seating locations. All other test locations are considered to be pedestrian, rather than sitting, areas. Although portions of the project open space are proposed to be used for an outdoor cafe, the seating would not be permanent seating and is not regarded as falling under the Planning Code's seating-comfort criterion.

Wind Evaluation and Criteria

Just as the wind-tunnel testing was performed in accordance with the test protocols of City Planning Code Section 148, the performance requirements of Code Section 148 were used to evaluate the results of the tests. The mean wind speeds are compared to the Code's comfort criteria of 11 mph for areas of substantial pedestrian use and 7 mph for seating areas, each not to be exceeded more than 10% of the time. Separate calculations evaluate compliance with the hazard criterion. As previously noted, the wind data observed at the Old San Francisco Federal Building are not full hour average speeds as identified by the Code, so it is necessary to adjust the wind criterion speed to obtain a valid comparison with the available data and the equivalent wind speeds based on those data. When normalized to the equivalent wind speeds used here, the hazard criterion speed is equal to 36 mph, the value used in the tables. Throughout the following discussion the wind speeds reported refer to the equivalent

⁹ The four scenarios are the Setting, Project and Cumulative from the July tests and the Alternative from the December tests. The Setting and Cumulative scenarios from the December tests are discussed in Attachment A.

¹⁰ The second series of tests included two added points (#35, 36) on Minna Street, near The Century site and well upwind and crosswind of the project site.

wind speeds that would be exceeded 10% of the time when referring to the comfort criteria, and about 0.011416% of the time when referring to the hazard criterion.

Test Output

The outputs of the computer program are presented in paired sets of detailed tables, one set for normal winds and hazardous winds for each of the scenarios, Setting, Project and Cumulative Development. These tables, appended to this Memorandum, provide the detail of the data and the intermediate results described above. The wind-tunnel ratios were included in the program input, and the results evaluated in the discussions that follow.

Figure 1 identifies the measurement point locations for all tests. Summary information about the wind-tunnel test results and evaluations of compliance with the comfort and hazard criteria¹¹ are presented for the existing Setting, Project, Alternative and Cumulative scenarios in Tables 1 through 4. Tables 1 and 3 present the Pedestrian Comfort Analyses and Tables 2 and 4 present the Wind Hazard Analyses. The related basic wind-tunnel test data and calculations are attached.

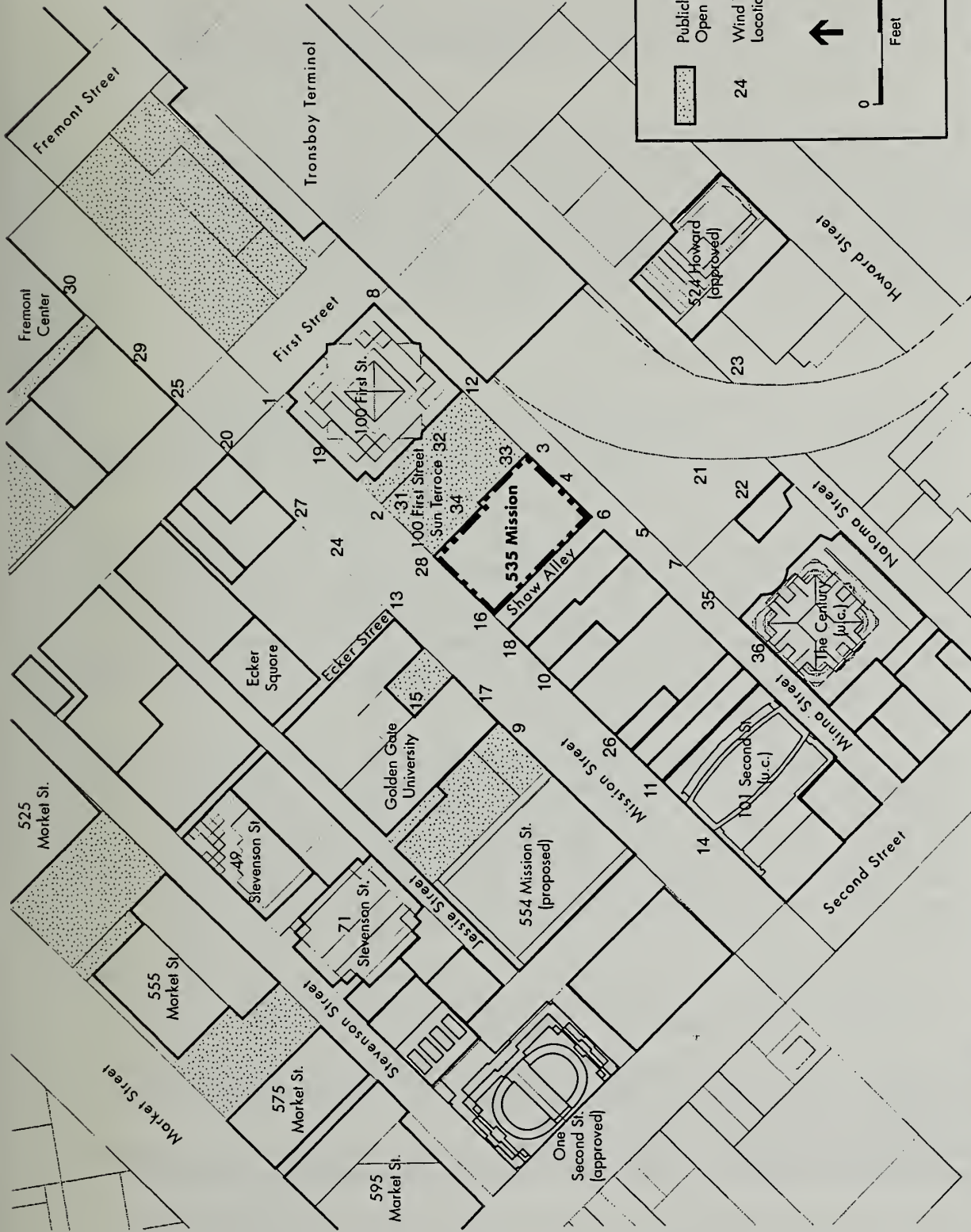
Throughout the following discussion, references are made to values from these Tables. Note that the times in hours and wind speeds in mph presented in those tables are rounded to the nearest integer value¹². The sums, differences and averages presented also are rounded after calculations that are made using the actual (unrounded) values. As a result, what may appear to be discrepancies in the tabular results are simply due to the rounding of results.

Discussion

Throughout the following discussion the wind speeds reported refer to the equivalent wind speeds that would be exceeded 10% of the time when referring to the Pedestrian Criterion, and winds exceeded 1 hour per year when referring to the Hazard Criterion.

¹¹ Tables 1 and 3 presents all measured 10% exceeded speeds for all test locations for each of the test scenarios. The percentage of time that the 11-mph criterion is exceeded is shown for all locations where an exceedance was measured. Measured exceedances of the hazard criterion are presented in hours per year of exceedance in Tables 2 and 4. The measurement locations are shown in Figure 1.

¹² This gives results that also are consistent with the uncertainty limits inherent in the wind-tunnel test procedure.



535 Mission Street / 980392

Figure 1

Wind Test Point Locations

TEST 1 - THE EXISTING WIND ENVIRONMENT¹³ - TEST II, July 1999

The Existing Setting

The existing setting consists of all existing buildings together with all approved, but yet unbuilt or uncompleted buildings in the vicinity of the site. Approved, but yet unbuilt or uncompleted buildings include the 524 Howard Street building, 101 Second Street building (under construction) at the corner of Second and Mission Streets and The Century (Natoma Mews) building across Minna Street from 101 Second Street. Further upwind, in the Yerba Buena Redevelopment Area are the Millennium Building on Central Block 1, the Sony Entertainment Building on Central Block 2 and the Starwood Hotel (under construction) on East Block 2. Also included is the Moscone Expansion Project, at Fourth Street¹⁴.

Comfort Criterion Conditions

The existing wind conditions range from moderate to windy; the average wind speed is 9 mph. Nine (#5, 7, 10, 11, 14, 21, 26, 35, 36) of the 36 measured locations exceed the Planning Code's pedestrian-comfort criterion value of 11-mph, with wind speeds of 14 mph or more at six locations (#5, 7, 11, 26, 35, 36). See Figure 1 and Table 1. The highest wind speeds in the vicinity (14 mph) occur to the west of the site, along Minna Street.

Along Mission Street were nineteen locations (#1, 2, 9-11, 13, 14, 17-19, 24-30), with nine (#9, 13, 17, 20, 24, 25, 27, 29, 30) on the north side of Mission and ten (#1, 2, 10, 11, 14, 16, 18, 19, 26, 28) on the south side of Mission. Nine points (#3-8, 12, 35, 36) were located on Minna Street, between First and Second Streets, and one point (#6) was located on Shaw Alley. Four test locations (#31-34) were located on the 100 First Street sun terrace and one (#15) on the Golden Gate University open area. Two test points (#21, 22) were placed in the open parking area between Minna and Natoma Streets, and one (#23) was located on Natoma Street, east of the Transbay Terminal access ramp.

Wind speeds along Mission Street range from 6 mph to 14 mph. Winds of 7 mph to 10 mph occur between First Street and Shaw Alley on the south side of Mission and winds of 6 mph to 8 mph occur from First Street to Golden Gate University on the north side of Mission. From Shaw to Second Street, winds on the south side of Mission range from 11 mph to 14 mph. Other wind tests have shown that winds on the north side of Mission, from Golden Gate University to Second Street range from 10 mph to 13 mph. Wind speeds at four of the nineteen locations along Mission Street exceed the pedestrian criterion, with all four exceedances (#10, 11, 14, 26) on the south side of the street, west of the project site.

At the nine points (#3-8, 12, 35, 36) on Minna Street, between First and Second Streets, wind speeds range from 5 mph to 15 mph, with the higher speeds occurring only west of Shaw Alley. At the one location (#6) on Shaw Alley, wind speeds were 9 mph.

At the four test locations (#31-34) located on the 100 First Street sun terrace and one (#15) on the Golden Gate University open area, wind speeds range from 2 mph to 6 mph. These locations all meet the seating-comfort criterion.

¹³ These conclusions are based on the Section 148 methodology including adjustments to correct for differences in the wind structure at the project site and at the Civic Center. See Wind Speed Profile Adjustments, in Section II.

¹⁴ Other approved or under construction buildings in the area were not included in the existing setting, for the following reasons: the One Second Street building (approved) is not expected to be built in the foreseeable future; The Bloomingdales building is too far west to affect the wind conditions of the site; and, the 246 Second Street Condominium High-Rise is too far south to affect the wind conditions of the site. Note that the One Second Street building was included in the Cumulative Development test.

Table 1 - Pedestrian Comfort Analysis - Existing, Project and Cumulative Conditions
Proposed 535 Mission Street High-Rise
San Francisco, California
Wind-Tunnel Test II, July 1999

References		Existing - II			Project - II				Cumulative - II			
Location Number	Comfort Criterion Speed (mph)	Measured Equivalent Wind Speed (mph)	Percent of Time Wind Speed Exceeds Criterion	e	Measured Equivalent Wind Speed (mph)	Percent of Time Wind Speed Exceeds Criterion	Speed Change Relative to Existing (mph)	e	Measured Equivalent Wind Speed (mph)	Percent of Time Wind Speed Exceeds Criterion	Speed Change Relative to Project (mph)	e
1	11	10	6		10	5			9	2	-1	
2	11	7	0		8	1	1		7	0	-1	
3	11	5	1		6	1	1		6	0		
4	11	6	1		7	1	2		7	1		
5	11	14	23	e	12	13	-2	e	11	10	-1	-
6	11	9	3		12	14	4	+	10	8	-2	-
7	11	15	24	e	13	19	-2	e	13	16		=
8	11	6	0		6	0			5	0	-1	
9	11	10	6		9	4	-1		10	4		
10	11	12	15	e	10	4	-3	-	11	11	2	
11	11	14	22	e	12	15	-2	e	12	14		=
12	11	8	2		6	1	-2		6	0	-1	
13	11	8	1		10	5	2		9	4		
14	11	12	15	e	11	12	-1	-	10	7	-1	
15	7	2	0		6	5	4		6	3	-1	
16	11	10	7		8	2	-2		9	2		
17	11	9	2		8	2	-1		8	2		
18	11	11	13		9	2	-3		10	6	2	
19	11	8	2		8	1	-1		7	0	-1	
20	11	8	3		8	1	-1		7	0	-1	
21	11	12	13	e	10	6	-2	-	11	8		
22	11	9	2		8	1	-1		7	1		
23	11	5	0		5	0			5	0		
24	11	6	0		9	2	2		8	1	-1	
25	11	11	10		11	11			11	10		
26	11	14	21	e	12	13	-2	e	12	13		=
27	11	7	0		7	1			7	0		
28	11	10	4		9	3	-1		8	1	-1	
29	11	6	0		6	0			5	0	-1	
30	11	8	1		8	1			7	0	-1	
31	7	5	1		7	9	2		6	4	-1	
32	7	6	3		8	15	2	+	6	4	-2	-
33	7	6	6		6	4	-1		5	3	-1	
34	7	5	1		5	1			4	0	-1	
35	11	14	21	e	13	19	-1	e	13	17		=
36	11	15	23	e	14	21	-1	e	13	16	-1	=
Average mph / %		9.0	7%		8.8	6%	-0.3		8.3	5%	-0.4	
Exceedances:		Total	9		Total	8			Total	5		
Counts:		Existing	9	e	Existing Exceedance	6	e		Prior Exceedance	5	=	
					New, Due to Project	2	+		New, Due to Cumulative	0	+	
					New, at new Location	0	#		New, at new Location	0	#	
					Exceedance Eliminated	3	-		Exceedance Eliminated	3	-	

Farther from the site, the wind speeds at the two locations in the open parking area between Minna and Natoma Streets were 12 mph and 9 mph, respectively, with the former (#21) exceeding the pedestrian-comfort criterion. The wind speed at the location (#23) on Natoma, east of the Transbay Terminal access ramp, is 5 mph.

Hazard Conditions

Currently, the wind hazard criterion is exceeded at two of the existing 36 locations. Both exceedances occur on Minna Street, west of the project site (#7 - 1 hour per year, and #36 - 2 hours per year). The total duration of these exceedances is 3 hours per year. See Table 2.

TEST 2 - PROJECT WIND IMPACTS - TEST II, July 1999

Project in the Existing Setting

The project setting consists of the project model, developed from plans provided by the project architects, and added to the existing setting for the test.

Comfort Criterion Conditions

With the project, wind conditions would remain moderate to windy; compared to the Existing conditions, the average wind speed would decrease to just under 9 mph. The Project would reduce existing wind speeds at 19 of the 36 locations and increase existing wind speeds at nine locations. Wind speeds would remain unchanged at eight locations. See Figure 1 and Table 1.

Wind speeds at seven (#5, 6, 7, 11, 26, 35, 36) of the 36 measured locations would exceed the Planning Code's pedestrian-comfort criterion value of 11-mph, two fewer exceedance than under Existing conditions. Three existing pedestrian comfort criterion exceedances would be eliminated (#10, 14, 21) and one new exceedance (#6) would be added by the project. One new exceedance of the seating-comfort criterion would be added in the 100 First Street sun terrace (#32).

A wind speed of 14 mph would continue to occur at one location (#36). The higher wind speeds in the vicinity (13 mph and 14 mph) would occur on Minna Street, west of Shaw Alley, while wind speeds of 12 mph would occur on the south side of Mission Street, west of the project site.

With increases of up to 2 mph and decreases of up to 3 mph relative to existing speeds, wind speeds along Mission Street would range from 6 mph to 12 mph. Wind speeds of 8 mph to 10 mph would occur between First Street and Shaw Alley on the south side of Mission and occur from Golden Gate University to east of First Street on the north side of Mission. Wind speeds at two of the 19 locations along Mission Street would continue to exceed the pedestrian criterion, with both exceedances (#11, 26) on the south side of the street. This would be two fewer exceedances on Mission Street than under Existing conditions.

Table 2 - Wind Hazard Analysis -Existing, Project and Cumulative Conditions
Proposed 535 Mission Street High-Rise
San Francisco, California
Wind-Tunnel Test II, July 1999

References		Existing - II			Project - II				Cumulative - II			
Location Number	Wind Hazard Criterion Speed (mph)	Measured Equivalent Wind Speed (mph)	Hours per year Wind Speed Exceeds Hazard Criterion	e x c e e d s	Measured Equivalent Wind Speed (mph)	Hours per year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Setting	e x c e e d s	Measured Equivalent Wind Speed (mph)	Hours per year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Project	e x c e e d s
1	36	19			19				14			
2	36	16			21				13			
3	36	20			20				16			
4	36	23			23				19			
5	36	35			33				20			
6	36	25			23				19			
7	36	36	1	e	35		-1	-	24			
8	36	16			17				11			
9	36	18			27				23			
10	36	27			23				22			
11	36	30			30				23			
12	36	23			21				15			
13	36	16			24				17			
14	36	29			29				18			
15	36	7			12				11			
16	36	23			21				17			
17	36	18			23				20			
18	36	23			21				25			
19	36	19			20				12			
20	36	20			17				14			
21	36	20			18				19			
22	36	16			15				13			
23	36	13			15				13			
24	36	14			20				14			
25	36	22			26				25			
26	36	30			27				23			
27	36	16			19				13			
28	36	17			21				14			
29	36	11			11				10			
30	36	15			16				12			
31	36	12			13				10			
32	36	12			14				12			
33	36	15			11				11			
34	36	10			9				8			
35	36	35			35				24			
36	36	40	2	e	38	2	-1	e	24		-2	-
Average mph / hr		20.5	3		21.3	2	-0.0		16.6	0	-0.0	
Exceedances:		Total	2		Total	1			Total	0		
Counts:		Existing	2	e	Existing Exceedance	1	e		Prior Exceedance	0	=	
					New, Due to Project	0	+	New, Due to Cumulative	0	+		

At the nine points (#3-8, 12, 35, 36) on Minna Street, between First and Second Streets, wind speeds would range from 6 mph to 13 mph, with the higher speeds continuing to occur west of Shaw Alley. At the one location (#6) on Shaw Alley, wind speeds would increase by almost 4 mph, to become 12 mph. Wind speeds at five (#5, 6, 7, 35, 36) of the nine locations on Minna Street would continue to exceed the pedestrian comfort criterion.

At the four test locations (#31-34) located on the 100 First Street sun terrace and one (#15) on the Golden Gate University open area, wind speeds would range from 5 mph to 8 mph. Wind speeds at four of these five locations would meet the seating-comfort criterion, while wind speed at one location (#32) would exceed this criterion.

The wind speeds at the two locations in the open parking area between Minna and Natoma Streets (#21, 22) would be 10 mph and 8 mph, respectively. The wind speed at the location (#23) on Natoma, east of the Transbay Terminal access ramp, would remain unchanged at 5 mph. Wind speeds at all three locations would meet the pedestrian-comfort criterion.

Hazard Conditions

The wind hazard criterion is currently exceeded at two locations under the Existing conditions. With the Project in place, one existing exceedance with a duration of about 1 hour per year and that occurs (#7) on Minna Street, west of Shaw Alley, would be eliminated. Another existing exceedance, with a duration of about 2 hours per year, occurs (#36) on Minna Street, west of Shaw Alley and adjacent to The Century; that exceedance would remain. The total duration of all exceedances is about 2 hours per year. See Table 2.

Project Wind Mitigation Measures

Discussion

Under Section 148 of the City Planning Code, new buildings and additions to buildings may not cause ground-level winds to exceed the wind comfort criteria values more than ten percent of the time year round between 7:00 a.m. and 6:00 p.m. If existing wind speeds exceed the comfort level, new buildings and additions must be designed to reduce ambient wind speeds to meet the requirements. Section 148 also establishes a hazard criterion, which is a 26 mph hourly-average equivalent wind speed for a single full hour. Buildings may not cause winds that meet or exceed this criterion.

Siting of large structures is expected to change wind flows, speeding up the wind at some locations and slowing it elsewhere in the vicinity. As can be seen in this case, a high-rise structure placed in a windy site can be expected to cause changes in the locations at which criterion exceedances occur. Experience indicates that it is common for buildings to eliminate some existing exceedances and create others. In practice it is not always possible to mitigate such remaining exceedances (as required by the language of the Planning Code).

In this case, three existing pedestrian-comfort criterion exceedances would be eliminated and one new exceedance would be created by the Project at the corner of Shaw and Minna Streets. In addition, wind speed at one of the five seating locations within nearby public open spaces would exceed the seating comfort criterion under the Project. Given that the Project site is now occupied by a low-rise structure, it is not unexpected that construction of even a mid-rise structure on the Project site could result in similar changes in wind speeds in the open space adjacent to the site. The winds from the west would contribute most to that sun terrace location (#32) that would experience the increase in wind speeds. This effect is likely due to the mass of the tower and the high street wall along Mission Street; west winds would be diverted northeast along Mission Street and then would be expected to increase ground-level winds at or beyond the downwind (Mission Street) corner of the building.

Thus, it may not be possible to design a building that could mitigate this seating criterion change; however, addition of street furniture or landscaping, or the relocation of seating within the sun terrace would mitigate this effect. With respect to the pedestrian criterion

exceedances, it may not be possible to design this building to fully meet the goals of the Project and to fully reduce ambient wind speeds to meet Section 148 criteria at all locations.

Mitigation Measures

The exceedance of the seating comfort criterion at one location in the sun terrace can be mitigated by the use of street furniture or landscaping. No mitigation is required for exceedances of the pedestrian-comfort criterion. One new pedestrian-comfort criterion exceedance would be caused by the Project, while three of the nine existing exceedances would be eliminated by the Project. Both of the Project exceedances and another existing exceedance would be eliminated when the cumulative development has occurred.

The Project open space would include portions of the width of Shaw Alley, the project open space, for most of the alley's length, for outdoor seating and cafe use. However, the wind speed in this area would not meet the seating-comfort criterion. Further mitigations, such as the use of porous screens (i.e. lattice work or fencing with planters) oriented perpendicular to Shaw Alley, may be sufficient to slow winds along Shaw Alley from Mission to Minna Street. This combination of measures may provide wind conditions that are suitable for the intended cafe uses for much of the time.

TEST 3 - CUMULATIVE DEVELOPMENT WINDS - TEST II, July 1999

Project with Cumulative Development

The Project with Cumulative Development setting adds reasonably foreseeable future high-rises to the project setting. The buildings added for the Cumulative Development setting were: 554 Mission, One Second Street, and two proposed 400 ft. high-rise hotel and retail developments in Yerba Buena East Block 1 and Yerba Buena East Block 2¹⁵.

Comfort Criterion Conditions

With the Project with Cumulative Development, wind conditions would remain moderate to windy; the average wind speed would decrease by less than 1/2 mph, compared to Project conditions, to just over 8 mph or about 1/2 mph less than under Existing conditions. The Project with Cumulative Development would reduce Project wind speeds at 19 of the 36 locations and increase Project wind speeds at two locations. Project wind speeds would remain unchanged at 15 locations. See Figure 1 and Table 1.

Wind speeds at five (#7, 11, 26, 35, 36) of the 36 measured locations would exceed the Planning Code's pedestrian-comfort criterion value of 11-mph, three fewer than under Project conditions. One existing (#5) and one project (#6) pedestrian comfort criterion exceedance would be eliminated; no new exceedance would be added. The Project seating-comfort criterion exceedance at the 100 First Street sun terrace (#32) would be eliminated.

The highest wind speeds in the vicinity (13 mph) would occur at two locations (#7, 36) on Minna Street, west of the project site, where the existing 15 mph wind speed would be reduced by about 2 mph, to 13 mph.

¹⁵ Other approved or under construction buildings in the area were not included in the Cumulative Development scenario, for the following reasons: the approved Bloomingdales building is too far west to affect the wind conditions of the site; and, the 246 Second Street Condominium High-Rise is too far south to affect the wind conditions of the site.

Wind speeds along Mission Street, with increases of up to 2 mph and decreases of up to 1 mph compared to project conditions, would range from 5 mph to 12 mph. Wind speeds of 7 mph to 9 mph would occur between First Street and Shaw Alley on the south side of Mission and would occur from Golden Gate University to First Street on the north side of Mission, with wind speeds of 5 mph to 11 mph just east of First Street. Wind speeds at two of the 19 locations along Mission Street would continue to exceed the pedestrian criterion, with both exceedances (#11, 26) on the south side of the street, west of Shaw Alley. This would be the same number of exceedances on Mission Street as the Project and two fewer than under Existing conditions.

At the nine points (#3-8, 12, 35, 36) on Minna Street, between First and Second Streets, wind speeds would range from 5 mph to 13 mph, with the higher speeds continuing to occur only west of Shaw Alley. At the one location (#6) on Shaw Alley, wind speeds would decrease by 2 mph, to become 10 mph. Wind speeds at three (#7, 35, 36) of the nine locations would continue to exceed the pedestrian comfort criterion; the number of exceedances on Minna Street would decrease by two.

At the four test locations (#31-34) on the 100 First Street sun terrace and one (#15) on the Golden Gate University open area, wind speeds would range from 4 mph to 6 mph. Wind speeds at all five locations would meet the seating-comfort criterion, and the Project wind speed exceedance at one location (#32) would be eliminated.

Farther from the site, the wind speeds at the two locations (#21, 22) in the open parking area between Minna and Natoma Streets would be 11 mph and 7 mph, respectively. The wind speed at the location (#23) on Natoma, east of the Transbay Terminal access ramp, would remain unchanged, at 5 mph. Wind speeds at all three locations would meet the pedestrian-comfort criterion, just as under project conditions.

Hazard Conditions

With the project plus cumulative conditions, the wind hazard criterion would not be exceeded at any location. The hazard exceedance (#36) on Minna Street, adjacent to The Century, that occurs under both the existing and the project scenarios, would be eliminated with the Project plus Cumulative Development in place. See Table 2.

TEST 4 - ALTERNATIVE WIND IMPACTS - TEST I, December 1998

Alternative in the Existing Setting

The alternative setting consists of the model of the alternative design, developed from plans provided by the project architects, and added to the existing setting from TEST I, December 1998. Note that adjustments have been made to the wind speed values from the TEST I setting as follows:

Location #7 - on the south side of Minna Street, west of Shaw Alley. The TEST I value was about 3/4 mph higher than the TEST II value.

Location #18 - on the south side of Mission, west of Shaw Alley. The TEST I value was actually only about 1/4 mph higher than the TEST II value, but rounding of the result caused the TEST I value to be reported as 12 mph and the TEST II value to be reported as 11 mph. This small actual difference caused the TEST I value to be

reported as an exceedance of the pedestrian comfort criterion, while in TEST II, it was not an exceedance.

Location #23 - on Natoma Street, east of the Transbay Terminal access ramp. The TEST I value was only about 1/4 mph lower than the TEST II value.

Location #31 - on the 100 First Street sun terrace . The TEST I value was about 1/2 mph lower than the TEST II value.

Comfort Criterion Conditions

With the Alternative, wind conditions would remain sheltered to moderately windy; compared to the Existing conditions, the average wind speed would increase, by about 1/2 mph, to just over 9 mph. The Alternative would reduce existing wind speeds at seven of the 34 locations and increase existing wind speeds at 12 locations. Existing wind speeds would remain unchanged at 15 locations. See Figure 1 and Table 3.

Wind speeds at seven (#4, 7, 10, 11, 14, 21, 26) of the 34 measured locations would exceed the Planning Code's pedestrian-comfort criterion value of 11-mph. No new exceedance would be added by the Alternative. One new exceedance of the seating-comfort criterion would be added in the 100 First Street sun terrace (#32).

Wind speed of 16 mph would continue to occur at one location (#7). The highest wind speeds in the vicinity (13 mph and 16 mph) would occur on Minna Street, west of Shaw Alley, while wind speeds of 12 mph and 13 mph would occur on the south side of Mission Street, west of the project site.

Wind speeds along Mission Street, with increases and decreases of up to 2 mph in mid-block; would range from 6 mph to 13 mph. Wind speeds of 9 mph to 11 mph would occur between First Street and Shaw Alley on the south side of Mission and occur from Golden Gate University to east of First Street on the north side of Mission. Wind speeds at four of the 19 locations along Mission Street would continue to exceed the pedestrian criterion, with all four of the exceedances (#10, 11, 14, 26) on the south side.

At the seven points (#3-8, 12) on Minna Street, between First and Second Streets, wind speeds would range from 6 mph to 16 mph, with the higher speeds continuing to occur only west of Shaw Alley. At the one location (#6) on Shaw Alley, wind speeds would increase by 3 mph, to become 11 mph. Wind speeds at two (#5, 7) of the seven locations would continue to exceed the pedestrian comfort criterion; the number of exceedances on Minna Street would remain unchanged. Locations #35 and 36, which were added in TEST II, both exceed the pedestrian comfort criterion under all cases.

At the four test locations (#31-34) located on the 100 First Street sun terrace and one (#15) on the Golden Gate University open area, wind speeds would range from 4 mph to 8 mph. Wind speeds at four of these five locations would meet the seating-comfort criterion, while wind speed at one location (#32) would exceed this criterion.

Farther from the site, the wind speeds at the two locations in the open parking area between Minna and Natoma Streets would be 12 mph and 8 mph, respectively, with the former (#21) continuing to exceed the pedestrian-comfort criterion. The wind speed at the location (#23) on Natoma, east of the Transbay Terminal access ramp, would increase by 1 mph, to become 5 mph. Wind speeds at three of these four locations would meet the pedestrian-comfort criterion, while the one existing exceedance would continue.

Table 3 - Pedestrian Comfort Analysis - Existing, Alternative & Cumulative Conditions
Proposed 535 Mission Street High-Rise
San Francisco, California
Wind-Tunnel Test I, December 1998

References		Existing - I			Alternative - I				Cumulative - I		
Location Number	Comfort Criterion Speed (mph)	Measured Equivalent Wind Speed (mph)	Percent of Time Wind Speed Exceeds Criterion	exceeds	Measured Equivalent Wind Speed (mph)	Percent of Time Wind Speed Exceeds Criterion	Speed Change Relative to Existing (mph)	exceeds	Measured Equivalent Wind Speed (mph)	Percent of Time Wind Speed Exceeds Criterion	Speed Change Relative to Alternative (mph)
1	11	10	6		11	9	1		10	7	
2	11	7	0		9	2	2		9	4	
3	11	5	0		6	1	1		6	0	
4	11	6	1		9	2	3		7	0	-2
5	11	14	23	e	13	20	-1	e	13	16	-1
6	11	8	2		11	10	3		10	8	-1
7	11	16	30	e	16	29		e	14	22	-1
8	11	6	0		6	0			5	0	-1
9	11	10	6		10	5			10	7	1
10	11	12	15	e	12	13	-1	e	12	13	
11	11	14	23	e	13	21		e	15	23	1
12	11	8	2		6	1	-2		5	0	-1
13	11	8	1		10	7	2		11	11	1
14	11	12	18	e	12	15		e	11	9	-1
15	7	2	0		4	0	2		6	0	2
16	11	10	7		11	9	1		11	8	
17	11	9	2		9	2			10	5	1
18	11	12	14	e	10	5	-2	-	11	11	1
19	11	8	2		10	4	1		10	4	
20	11	8	3		7	2	-1		9	4	1
21	11	12	13	e	12	14		e	10	7	-2
22	11	9	3		8	2	-1		7	0	-2
23	11	4	0		5	0	1		5	0	-1
24	11	6	0		8	2	2		10	4	2
25	11	11	10		11	10			11	11	
26	11	14	21	e	13	18	-1	e	13	19	1
27	11	7	0		7	1			9	2	2
28	11	10	5		10	6			10	6	
29	11	6	0		6	0			7	0	1
30	11	8	1		8	1			8	1	
31	7	4	0		6	0	2		4	0	-2
32	7	6	0		8	1	2	+	5	0	-3
33	7	6	0		6	0			5	0	-1
34	7	5	0		6	0	1		4	0	-2
Average mph / %		8.7	6%		9.1	6%	0.4		8.9	6%	-0.2
Exceedances:		Total	8		Total	7			Total	5	
Counts:		Existing	8	e	Existing Exceedance	7	e		Prior Exceedance	5	
					New, Due to Project	0		+	New, Due to Cumulative	0	
					New, at new Location	0		#	New, at new Location	0	
					Exceedance Eliminated	1		-	Exceedance Eliminated	2	

Hazard Conditions

The wind hazard criterion is now exceeded at one location (#7) on Minna Street, west of Shaw Alley.

**Table 4 - Wind Hazard Analysis -Existing, Alternative and Cumulative Conditions
Proposed 535 Mission Street High-Rise
San Francisco, California
Wind-Tunnel Test I, December 1998**

References		Existing - I			Alternative - I				Cumulative - I			
Location Number	Wind Hazard Criterion Speed (mph)	Measured Equivalent Wind Speed (mph)	Hours per year Wind Speed Exceeds Hazard Criterion	e	Measured Equivalent Wind Speed (mph)	Hours per year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Setting	e	Measured Equivalent Wind Speed (mph)	Hours per year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Alternative	e
1	36	19			19				18			
2	36	16			18				17			
3	36	17			21				14			
4	36	19			23				15			
5	36	35			35				22			
6	36	19			21				19			
7	36	37	1	e	37	1	0	e	25			-
8	36	16			16				13			
9	36	18			24				21			
10	36	27			26				21			
11	36	32			30				26			
12	36	23			21				13			
13	36	16			23				20			
14	36	33			30				19			
15	36	7			9				15			
16	36	23			25				18			
17	36	18			20				20			
18	36	27			25				20			
19	36	19			18				17			
20	36	20			19				21			
21	36	20			21				18			
22	36	16			15				13			
23	36	11			12				16			
24	36	14			20				19			
25	36	22			23				23			
26	36	30			30				25			
27	36	16			18				16			
28	36	20			22				18			
29	36	11			12				12			
30	36	18			18				13			
31	36	9			11				8			
32	36	11			13				11			
33	36	11			10				10			
34	36	10			11				9			
Average mph / hr		19.4	1		20.5	1	0.0		17.1	0	0.0	
Exceedances:		Total	1		Total	1			Total	0		
Counts:		Existing	1	e	Existing Exceedance	1	e		Prior Exceedance	0	=	
					New, Due to Project	0	+		New, Due to Cumulative	0	+	
					New, at new Location	0	#		New, at new Location	0	#	
					Exceedance Eliminated	0	-		Exceedance Eliminated	1	-	

With the Alternative in place, the existing exceedance would continue, with no change in the duration of the exceedance. See Table 4.

IV. SUMMARY

General Conditions and Comfort Criteria

Existing Setting and Project Scenario

The existing wind conditions of the project site and vicinity range from sheltered to moderately windy; the average wind speed is about 9 mph. Wind speeds in pedestrian areas range from 2 mph to 15 mph. In general, the higher ground-level wind speeds in the vicinity of the site occur west of Shaw Alley, along Minna Street and along Mission Street. The wind speeds at nine of the 36 measured existing locations exceed the Planning Code's pedestrian-comfort criterion value of 11-mph.

The Project would reduce wind speeds at 19 of the 36 existing locations and increase wind speeds at nine locations. Existing wind speeds would remain unchanged at eight locations. Overall, compared to Existing conditions, the average wind speed at the 36 existing locations would decrease to just under 9 mph.

Wind speeds at seven of the 36 measured locations would exceed the Planning Code's pedestrian-comfort criterion value of 11-mph, two fewer exceedance than under Existing conditions. Three existing pedestrian comfort criterion exceedances would be eliminated and one new exceedance would be added by the project. One new exceedance of the seating-comfort criterion would be added in the 100 First Street sun terrace.

Wind speeds in pedestrian areas would range from 5 mph to 14 mph. In general, the higher ground-level wind speeds in the vicinity of the site would continue to occur along the south side of Mission Street, west of Shaw Alley, and along Minna Street, west of Shaw Alley. On Mission Street wind speeds would vary, increasing or decreasing by as much as 2 mph on the north and south sides of Mission Street, east of Shaw Alley, and decreasing by as much as 3 mph west of Shaw Alley. On Minna Street, wind speeds would increase by as much as 4 mph adjacent to the Project, and remain unchanged or decrease by as much as 2 mph at other locations on Minna.

The project would have a total of seven exceedances of the pedestrian-comfort criterion, two fewer than under Existing conditions. The project would add no new pedestrian comfort exceedance and would eliminate three of the nine existing exceedances, while six of the nine existing exceedances would continue.

One of the five seating locations within the 100 First Street sun terrace and the Golden Gate University entry would exceed the seating comfort criterion by 1 mph. This would be a new exceedance of the seating comfort criterion. This new exceedance should be mitigable.

Effects of Cumulative Development on the Project

With the Project with Cumulative Development, the average wind speed would decrease slightly, compared to Project conditions, to about 8 mph. The Project with Cumulative Development would reduce Project wind speeds at 19 of the 36 locations and increase Project wind speeds at two locations. Project wind speeds would remain unchanged at 15 locations.

Wind speeds at five of the 36 measured locations would exceed the Planning Code's pedestrian-comfort criterion value of 11-mph, two fewer exceedances than under Project conditions. Two existing pedestrian comfort criterion exceedances would be eliminated and no new exceedance would be added. The one Project exceedance of the seating-comfort criterion in the 100 First Street sun terrace (#32) would be eliminated.

In general, cumulative development would result in general decreases in wind speeds throughout the vicinity of the Project, although increases would occur on the south side of Mission Street, between Shaw Alley and Second Street.

Project Mitigation Measures

Mitigation would be required to eliminate the seating comfort exceedance that would occur one location at the 100 First Street sun terrace under the Project scenario. There are no Project specific exceedances of the pedestrian criterion. In addition, many of the existing pedestrian comfort criterion exceedances would be eliminated when the cumulative development has occurred.

The net effect of the Project is to reduce the number of pedestrian-comfort criterion exceedances. One new pedestrian-comfort criterion exceedance would be caused by the Project, at the corner of Shaw and Minna Streets, while three of the nine existing exceedances would be eliminated by the Project. Another project exceedance and another existing exceedance would be eliminated when the cumulative development of the immediate vicinity has occurred.

The exceedance of the seating comfort criterion at one location in the sun terrace can be mitigated by the use of street furniture or landscaping.

The Project open space would include portions of the width of Shaw Alley, the project open space, for most of the alley's length, for outdoor seating and cafe use. However, the wind speed in this area would not meet the seating-comfort criterion. Further mitigations, such as the use of porous screens (i.e. lattice work or fencing with planters) oriented perpendicular to Shaw Alley, may be sufficient to slow winds along Shaw Alley from Mission to Minna Street. This combination of measures may provide wind conditions suitable for the intended cafe uses for much of the time.

Alternative Design Project

An alternative design building was tested and compared to an existing setting and a cumulative development scenario.

The Alternative would reduce wind speeds at seven of the 34 existing locations and increase wind speeds at 12 locations. Existing wind speeds would remain unchanged at 15 locations. Overall, compared to Existing conditions, the average wind speed at the 34 existing locations would increase to just over 9 mph.

Wind speeds at seven (#4, 7, 10, 11, 14, 21, 26) of the 34 measured locations would exceed the Planning Code's pedestrian-comfort criterion value of 11-mph. No new pedestrian comfort exceedance would be added by the project. One exceedance of the seating-comfort criterion would be added in the 100 First Street sun terrace (#32).

Wind speeds in pedestrian areas would range from 6 mph to 16 mph. In general, the higher ground-level wind speeds in the vicinity of the site would continue to occur along the south side of Mission Street, west of Shaw Alley, and along Minna Street, west of Shaw Alley. On Mission Street, wind speeds would increase by as much as 2 mph east of Shaw Alley and decrease by as much as 2 mph west of Shaw Alley. On Minna Street, wind speeds would increase by as much as 3 mph near the Project site and would remain unchanged or decrease by 1 mph to 2 mph elsewhere.

The Alternative would have a total of seven exceedances of the pedestrian-comfort criterion.

The project would add no new exceedances and would eliminate one of the seven existing exceedances, while six of the seven existing exceedances would continue.

One of the five seating locations within the 100 First Street sun terrace and the Golden Gate University entry would exceed the seating comfort criterion by 1 mph. This would be a new exceedance of that criterion. This new exceedance should be mitigable.

Wind Hazard Conditions

Existing Setting and Project Scenario

The wind hazard criterion of the Planning Code currently is exceeded at two of the 36 locations. Both exceedances occur on Minna Street, west of the project site. The total duration of these exceedances is 3 hours per year.

With the Project, one existing exceedance, with a duration of about 1 hour per year, would be eliminated. Another exceedance, with a duration of about 2 hours per year, would remain. The total duration of all exceedances would be about 2 hours per year.

Effects of Cumulative Development on the Project

With the Project plus Cumulative Development in place, the remaining existing and project exceedance would be eliminated.

Project Mitigation Measures

With the Project, one existing exceedance would be eliminated, but another exceedance would remain. The total duration of all exceedances would be about 2 hours per year. No project mitigation is known that could eliminate that preexisting exceedance.

Alternative Design Project

The Alternative demonstrates the same wind hazard performance as the Project. The wind hazard criterion of the Planning Code currently is exceeded at two test locations, on Minna Street west of Shaw Alley, for a total duration of 3 hour per year. The Alternative would eliminate one exceedance with a duration of 1 hour per year and the Cumulative development would eliminate the other.

APPENDIX C

MITIGATION MEASURES IDENTIFIED IN THE 1986 FEIR THAT ARE NO LONGER APPLICABLE

MITIGATION MEASURES IDENTIFIED IN THE 1986 FEIR THAT ARE NO LONGER APPLICABLE

The following measures were identified in the 1986 FEIR but have been determined to no longer be applicable to the current proposed project. As such, they have been listed here for informational purposes along with an explanation (in italics following each measure) regarding why the measure is not applicable to the proposed project.

VISUAL QUALITY

- In order to reduce obtrusive light or glare, the project sponsor would use no mirrored glass on the building. *(The proposed project would be required to comply with this measure because it is now required by law per City Planning Commission Resolution 9212. As such, this measure is no longer considered a mitigation measure.)*

CULTURAL RESOURCES

- Following site clearance, an appropriate security program would be implemented to prevent looting. Any discovered cultural artifacts assessed as significant by the archaeologist upon concurrence by the ERO and the President of the LPAB would be placed in a repository designated for such materials. Copies of the reports prepared according to these mitigation measures would be sent to the California Archaeological Site Survey Office at Sonoma State University. *(This measure is no longer necessary, based on revisions to the Cultural Resources measure included in Chapter IV, Mitigation Measures, of this SEIR.)*

TRANSPORTATION

- The project sponsor would contribute funds for maintaining and augmenting transportation services in an amount proportionate to the demand created by the project, as provided by the Board of Supervisors Ordinance Number 224-81. Should said Ordinance be declared invalid by the courts, the project sponsor has agreed to participate in any subsequent equivalent mitigation measures adopted by the Planning Commission or the City in-lieu thereof, which would apply to all projects similarly situated. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project. However, the current project would be subject to the Transit Impact Development Fee, which is a one-time fee assessed against downtown office projects to offset increased capital costs to MUNI to provide additional capacity to serve the increased demand from new development.)*
- Secure, safe bicycle storage facilities would be provided relative to the demand generated by project commuters and short-term visitors. *(The proposed project would be required to comply with this measure because it is now required by the Planning Code. As such, this measure is no longer considered a mitigation measure.)*

- At the request of the Department, the sponsor would provide a fair and equitable in-lieu contribution toward the Transportation Study for the South of Market area. Alternatively, within a year of full occupancy of the project, the sponsor would conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for carpools and vanpools. The project sponsor would make this survey available to the Department. This measure would provide needed information to aid in transportation planning with the City. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- The project sponsor would, in consultation with the Municipal Railway, install eyebolts or make provisions for direct attachment of eyebolts for Muni trolley wires on the proposed building wherever necessary to agree to waive the right to refuse the attachment of eyebolts to the proposed building if such attachment is done at City expense. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project. The sponsor has nonetheless agreed to implement this measure.)*
- The project sponsor shall: 1) participate with other project sponsors and/or the San Francisco Parking authority in undertaking studies of the feasibility of constructing an intercept commuter parking facility in a location appropriate for such facility to meet the unmet demand for parking for those trips generated by the project which cannot reasonably be made by transit, and 2) participate with other project sponsors and/or the Municipal Railway in studies of the feasibility of the establishment of a shuttle system serving the project site and the parking facility. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- The placement of paving, landscaping or structures in the sidewalk area (subject to City approval) would be done in such a way as to minimize interference with pedestrian traffic. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project. The sponsor has nonetheless agreed to implement this measure.)*
- As required by Section 163 of the City Planning Code, a member of the building management staff would be designated as a transportation broker to coordinate measures that are part of a transportation management program, such as: encouraging a flexible time system for employee working hours (to be developed by project tenants in consultation with the Department of City Planning) to reduce peak-period congestion by a planned spreading of employee arrivals and departures; encouraging transit use through the on-site sale of BART, Muni, and other carriers' passes to employees; and encouraging employee carpool and vanpool systems in cooperation with RIDES for Bay Area commuters by providing a central clearinghouse for carpool and vanpool information. *(The proposed project would be required to comply with this measure because it is now required by the Planning Code. As such, this measure is no longer considered a mitigation measure.)*
- Off-street parking spaces would be controlled to assure priority for vehicles driven by the physically handicapped, vehicles using spaces for short-term rather than all-day parking, and vanpool and carpool vehicles. All remaining parking spaces would be subject to rates that encourage short-term use of said spaces and discourage all-day parking; the parking rate would be reviewed and approved by the Department of City Planning, or alternatively, the project sponsor would agree to be bound by a formula, to be developed by the Department of City Planning, which

structures rates so as to favor short-term parking. *(The proposed project would be required to comply with this measure because the issues it addresses are now required by the Planning Code, Building Code, and the American With Disabilities Act. As such, this measure is no longer considered a mitigation measure.)*

- Building directories and signs for the service elevators would be placed in the loading area. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project. The sponsor has nonetheless agreed to implement this measure.)*
- The project sponsor would ensure that valet parking did not block or hinder service vehicle access to the basement. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project. The sponsor has nonetheless agreed to implement this measure.)*
- The parking driveway could include warning devices (lighted signs and noise-emitting devices) to alert pedestrians to vehicles exiting the structure. The sponsor will make a decision on this measure during final design stage based on design criteria and cost. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project. The sponsor has nonetheless agreed to implement this measure.)*
- Pacific Gas and Electric Company could coordinate work schedules with other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This should be done through the San Francisco Committee for Utility Liaison on Construction and Other Projects (CULCOP). In-street utilities should be installed at the same time as the street is opened for construction of the project to minimize street disruption. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- The City could implement the transportation improvements described in the Downtown Plan. Cumulative transportation impacts within San Francisco would be reduced by the improvements, and, to the extent that San Francisco could influence transportation improvements recommended by the Plan for areas outside the City, regional cumulative impacts caused by downtown growth would also be reduced. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- The City could act to implement the transportation mitigations described in Vol. 1, Section V.E., Mitigation, pp. V.E.4-28, in the Downtown Plan EIR. These measures are similar or identical to those in the Downtown Plan and include, in summary: measures to construct and maintain rail rapid transit lines from downtown San Francisco to suburban corridors and major non-downtown centers in San Francisco; measures to fund Vehicle Acquisition Plans for San Francisco and regional transit agencies to expand existing non-rail transit service; provide exclusive transit lanes on City streets and on freeways; reduce incentives to drive by reducing automobile capacities of bridges and highways in certain circumstances and by discouraging long-term parking; measures to encourage carpools, vanpools, and bicycle use; and measures to improve pedestrian circulation within downtown San Francisco. Some of the Implementing Actions would require approval by decision-makers outside the City and County of San Francisco; many of the measures would require action by City agencies other than the City Planning Commission, such as the San Francisco Public Utilities Commission and/or Board of Supervisors. These measures are system-

wide measures that must be implemented by public agencies. Other than project-specific measures such as the relevant transportation mitigation measures described above as part of the project or such as the Transit Impact Development Fee assessment required by San Francisco ordinance 224-81 which contribute indirectly to implementation of these system-wide measures, it is not appropriate to impose mitigation at system-wide levels on individual projects. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*

AIR QUALITY

- Measures identified to mitigate traffic impacts would also mitigate air quality impacts. Increasing roadway capacity (where feasible and cost effective), reducing vehicular traffic through increased ridesharing (carpool, vanpool, and transit), and implementing flexible and/or staggered work hours would reduce local and regional emissions of all pollutants. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*

ENERGY

- The project would be more energy-efficient than required by Title 24 of the California Administrative Code. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- A variable-air-volume air conditioning system would control the volume of conditioned air so that the building would remain a comfortable temperature. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- Fluorescent lights with parabolic diffusers would be used to conserve energy and reduce glare. Return-air diffuser slots in light fixtures would reduce air conditioning loads by removing part of the heat generated by light fixtures. Whenever possible, office suites would be equipped with individualized light switches, and time clock operation to conserve electrical energy. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- Natural gas would be used for water heating. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- An airside economizer would be used for free cooling whenever the outside air is below building temperature. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- A water economizer cycle system using condenser water to generate chilled water would be installed, so that in hot weather the heat exchangers would cool the water without using excessive amount of electricity. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*

- A carbon monoxide monitoring system would be used to control garage ventilation to avoid unnecessary operation of fans. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- The sponsor is considering performing a thorough energy audit of the structure's actual energy use after the first year of occupancy and implementing all cost effective alterations to the structure's energy system identified in the audit. Results of the audit would be available to the City. The decision whether to implement this measure would be made after completion of the building when energy use could be accurately measured and a determination of efficiency of energy consumption could be made. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- Active solar water heating is being considered for preheating of water. The decision as to whether to implement this measure would be made after completion of the building when energy use could be accurately measured and a determination of savings from the measure. If it is determined that the dollar amount of energy savings that could be achieved through the use of active solar would cover the cost of installation, then this measure would be implemented by the sponsor. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*

GEOLOGY/TOPOGRAPHY

- A detailed foundation and structural design would be conducted for the building by a California-licensed structural engineer and a geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project. *(The proposed project would be required to comply with this measure because it is now required by the Building Code. As such, this measure is no longer considered a mitigation measure.)*

HAZARDS

- An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to insure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance by the Department of Public Works of final building permits. *(The proposed project would be required to comply with this measure because it is now required by the Fire Code. As such, this measure is no longer considered a mitigation measure.)*

UTILITIES/PUBLIC SERVICES

- The project would include on-site storage for trash containers in the basement. Containers would not be placed on streets or sidewalks except during actual trash pickup. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*
- The project could provide containers to collect and store recyclable solid waste (such as glass, metal, computer cards, and newspaper) and the project sponsor could contract for recycling

service. The project sponsor will make a decision about this measure during final building design based on cost effectiveness. *(This measure is no longer considered a mitigation measure because it does not mitigate a significant impact created by the proposed project.)*

CHAPTER IX

SEIR AUTHORS AND CONSULTANTS

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1998.766E – 535 Mission Street

PLEASE CUT ALONG DOTTED LINE

RETURN REQUEST REQUIRED FOR FINAL
ENVIRONMENTAL IMPACT REPORT

REQUEST FOR FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

TO: San Francisco Planning Department,
Office of Environmental Review

Please send me a copy of the Final SEIR.

Signed: _____

Print Your Name and Address Below

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